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MARCH 1956 • 25c



IN THIS ISSUE:

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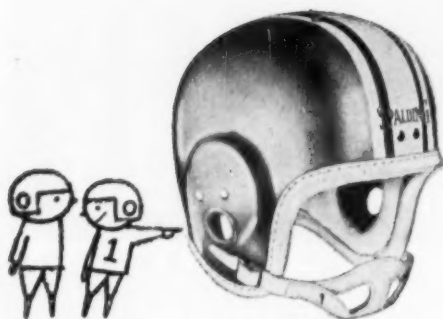
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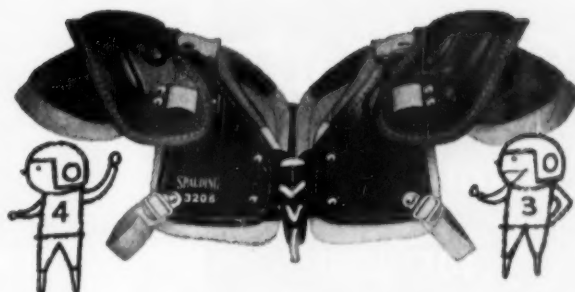
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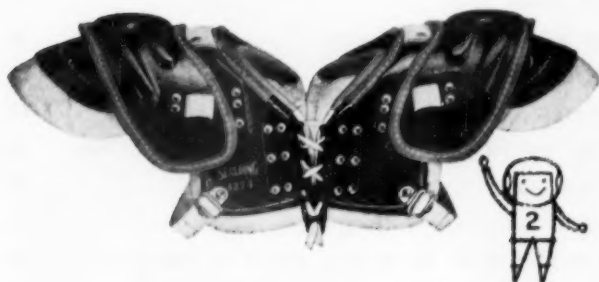
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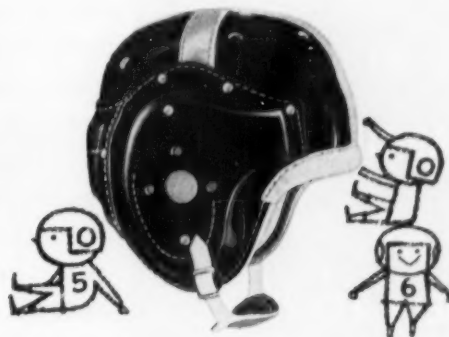
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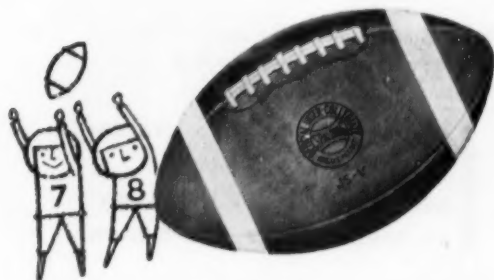
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# SCHOLASTIC COACH

Reg. U. S. Pat. Off.

VOLUME 25 • NUMBER 7 • MARCH

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by  
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*Flint, Michigan, Public Schools*

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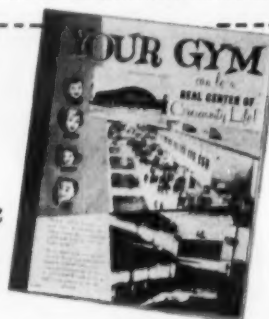
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# So the Russians won; so what?

**F**IVE weeks have schussed by since the Russians beat the skis off us in the Winter Olympics. Yet our republic still stands. Our Democrats and Republicans are still trading left hooks, Kentucky is still growing honorary colonels, and Pittsburgh is still last in the National League.

Somehow we thought things would be different. Judging by all the hysterical literature we read prior to the Olympics, we figured that a Russian victory would produce a national cataclysm. We envisioned Montana fleeing to Iceland, the Dodgers moving their night games to Omsk, and little children shifting from Davy Crockett to Karl Marx.

Nothing of the sort has happened. We competed in an international meet and didn't score as many points as some of the other guys. So what? Does it prove that we're weak, weary, and wanting in muscle? And that a nation that can't defend a bobsled title can hardly be expected to defend the free world?

This is the sort of infantile garbage dredged up by a lot of worrywarts the past few months, and we think it's ridiculous. If we can't enter an international meet without trembling over the political consequences of a defeat, then we shouldn't be competing in the first place.

Let's try to keep a semblance of sanity and sensibility. Let's try to remember that the Olympics is a friendly competition where participation, not winning, is the important thing.

That doesn't mean we shouldn't try our darnest to win. It does mean that we shouldn't expect to win every time, and that when we do lose we should do it graciously and calmly. That's the tradition of American sport and we have a right to feel proud of it.

We're not playing ostrich over the

frustrating paradox of modern Olympic competition. On the one hand, you have the nations—like us—who hew to the purely amateur Olympic ideal. And on the other hand, you have the nations—like Russia—who've been spending millions on the subsidization and training of athletes.

So what are we to do? Do we (1) refuse to compete against such nations; (2) adopt the same subsidization program; or (3) continue to observe the amateur ideal?

We're all for point No. 3—continuing to observe ideals. That's the American tradition and the Olympic tradition, and if we let it die the Olympics will die with it.

Can Uncle Sam continue to be successful with an amateur credo? You betcha! We'll win anything we care enough about to win. That may exclude long-distance skiing, women's gymnastics, and tandem canoeing. But in the events that really count—the men's track and field competition—we'll continue to show our heels to the rest of the world.

Want to bet that the Russians don't win more than four events in the 1956 men's track and field competition?

## KILL THE STALL!

**W**HEN the basketball rules doctors go into consultation next month, we earnestly hope they'll decide upon surgery. The patient is in pretty good shape, but it's got a big boil on its nose that's spoiling the facial beauty of the game.

We refer to the rule which permits a team to hang on to the ball for as long as it chooses without shooting. Every time you hear of a painful 25-16 or 10-6 game, you can bet your last bladder that one of the coaches went in for a slow-down.

The puerility of the rule was grotesquely dramatized in the recent San Francisco-California game. Now

this was a game of historic proportions. The Dons were gunning for their 40th straight win, a new national record, and every fan's eye was trained on the Berkeley gym.

Alas, more hysteria than history was made that night. The outmanned Bears figured the only way they could win was by slowing the game down to a crawl. And that's precisely what they did.

The result was a travesty. At one point, a Bear put the ball on ice for eight straight minutes. He stood transfixed in the backcourt, like a scanty-clad scarecrow, while the other so-called combatants squatted on the floor or passed the time of day with teammates, opponents, or nearby customers.

Mind you, all this was perfectly within the rules. But was it basketball? Any rule that can lead to such a dreadful burlesque has no business being in the code, and should be hacked off the fair face of the game.

The solution is as obvious as a recruiter's pitch. Why not adopt the slick pro rule that compels a shooting attempt within 24 seconds? This is so beautifully simple and effective that any continued rejection of it would be absurd.

The nice thing about it is that it wouldn't cause any complications—that is, to at least 95% of our teams. From a study of thousands of games over the past several years, Howard Hobson, Yale coach, informs us that our colleges shoot the ball even faster than the pros! Where the pros take a shot every 18 seconds, the collegians pop one up every 17 seconds.

What about the teams that play a ball-possession game? Wouldn't the new rule wreak havoc with them? Mebbe so, but so what? Did you ever analyze such offenses? We've yet to see one of them that does anything positive with the ball for half the time it controls it.

The players merely chuck it around for the sheer sake of pos-  
(Continued on page 69)



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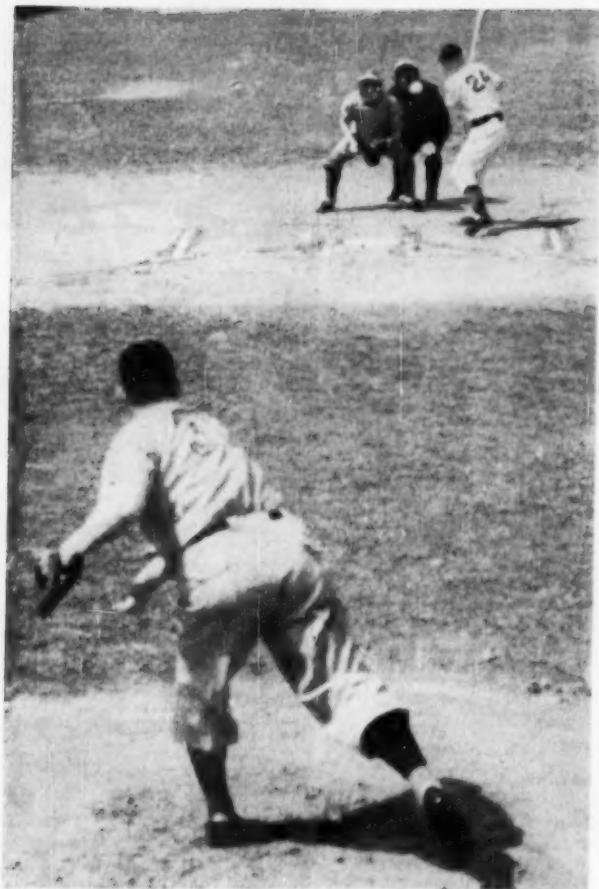
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# RELIEF PITCHING

By **ETHAN ALLEN**

*Baseball Coach, Yale University*

**T**HE relief pitcher has really come into his own in modern-day baseball, and good relief pitching is now considered the backbone of every pitching staff.

This is particularly true in the big leagues, where managers and players have come to realize that an arm is meant to be used. As a consequence, the list of rubber-arm relievers—pitchers who aren't afraid to use their arms and their heads—keeps growing every year.

Big league managers might analyze relief pitchers in a variety of ways, inasmuch as some of the leaders in this respect are specialists. Ellis Kinder has a great curve ball, Hoyt Wilhelm throws a knuckler, and Jim Konstanty commands a sinker.

Certainly stuff on the ball is important, but so is control. You must remember that each time a relief pitcher is called upon, it usually means trouble. Almost always there are runners in scoring position and the reliever can seldom afford to walk a man or lay over a "fat" one.

That means he must have pinpoint control. The overpowering relief artist may well try to strike

out the batter or make him pop up. The average reliever will try to get him to hit the ground so that a play can be made at the plate or, better still, the ball can be converted into a double play.

Last season, Al Lopez asserted that a good relief pitcher had to have (1) a good fast ball, (2) control, and (3) the ability to work every day. Apparently, Cleveland's ace relievers, Don Mossi and Ray Narleski, possess these somewhat exalted prerequisites.

A fourth qualification might be mental attitude. Unless a pitcher feels that he can pitch every day or every other day, he won't be able to bear the burden demanded of relievers.

Perhaps a fifth qualification could be classified as the ability to warm up quickly. Some pitchers think that a 15 or 20-minute warmup is necessary to pitch effectively. This sort of hurler isn't meant for the bullpen. In fact, he may not be a good man for the ball club. If he's finicky about one thing, chances are he'll be the same about others.

A pitching staff includes a variety of personalities. Some pitchers fret

over not getting certain starting assignments. Their unhappiness may stem from their failure to start against a strong team or conversely, from having to pitch against a strong opponent.

The first type of pitcher seldom constitutes a problem. Anyone who likes to challenge the strong clubs can be counted on to face anybody any time.

The second type, on the other hand, frequently likes to pick his spots, and the bullpen isn't for him. Coaches are wont to excuse such pitchers on the grounds that "they just can't relieve." But you can bet that they could relieve—if they made an honest attempt to do so.

The philosophy behind their line of thinking is that you can't win many games by helping the other guy. But pitchers like Robin Roberts and Bob Lemon have disproved this theory. They perform the double chore to the advantage of both themselves and their teams.

Nobody ever accused Bobo Newsum of laying down on the job. He was always a hustler and always played to win. One day, however, while pitching against Lefty Gomez, he suffered a strange mental kink which, oddly enough, eventually led to a victory for him and the St. Louis Browns.

A terrific cloudburst interrupted  
(Continued on page 76)

# POPPA HALL, BELLY ROLLER

By PERCY BEARD

Head Track Coach, University of Florida

**J.** LEWIS HALL, Jr., was more renowned as a football player than a high jumper when he entered the University of Florida in the fall of 1949. And a fine football player he continued to be during his four years at Florida—being selected the outstanding player in the 1953 Gator Bowl game.

He might also have achieved fame as a sprinter if he had concentrated on running instead of jumping. He ran the 100 in a few meets and hit 9.7 twice. This speed, coupled with a solid 190 lbs., explains his effectiveness in football.

While at Leon High School in Tallahassee, he did 6'2", using the Western style jump with a four-stride approach.

After he entered Florida, he changed to the straddle jump but retained the short approach. The transition was made with little difficulty. His best effort as a freshman was 6'4½" in winning the Junior National AAU title.

As a sophomore, he worked his height up to 6'6" with the four-stride approach. Throughout this period, he frequently tried a longer approach but could not jump as well.

He finally became convinced that he must use a longer approach to gain any additional height. Once he believed this, he had no more trouble. He moved back four more strides and shortly thereafter did 6'8" in a dual meet. He later won the 1951 NCAA with 6'9".

In this same meet, he barely dislodged the bar at 6'11". Another 1/16" clearance would have left the bar in place and given him a tie for the world record. Just one of the many "ifs" that dot the world of sports!

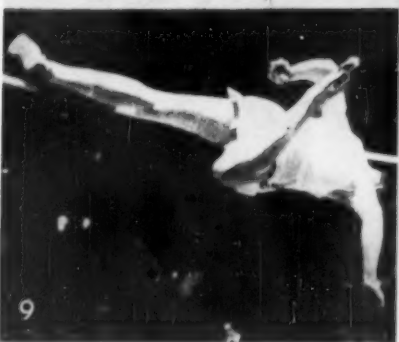
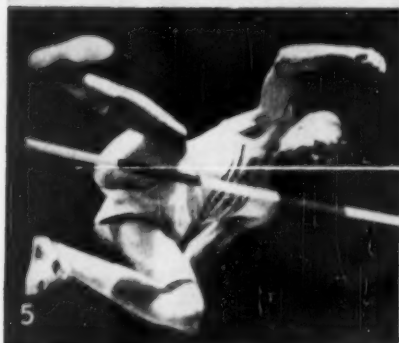
As a junior in 1952, he pulled a muscle in his right groin in winning the National AAU Indoor Championship and never fully recovered from its effect. I firmly believe this injury cost him the first seven-foot jump.

His jumping style is worthy of study because of its effectiveness and economy of effort. The details of the jump itself are clearly shown in the pictures.

He uses an eight-stride approach, starting with his right foot and the stride lengths average as follows: (1) 1'2", (2) 3'11", (3) 4'5", (4) 4'7", (5) 4'8", (6) 4'9", (7) 5'11", and (8) 5'10". This indicates an easy, relaxed run with a drive-in on the last two strides and a slight shortening of the last stride. The line of approach makes an angle of about 35° with the bar.

A peculiarity all his own is a zig-zag on his 6th and 7th strides. If a line were drawn between his starting position and take-off, his left foot on stride six would land 2'5" to the left of such a line and his right foot 7" to the right on stride seven. His left, or jumping, foot is then planted on the line—and in line with it.

The fact that Hall can jump high-



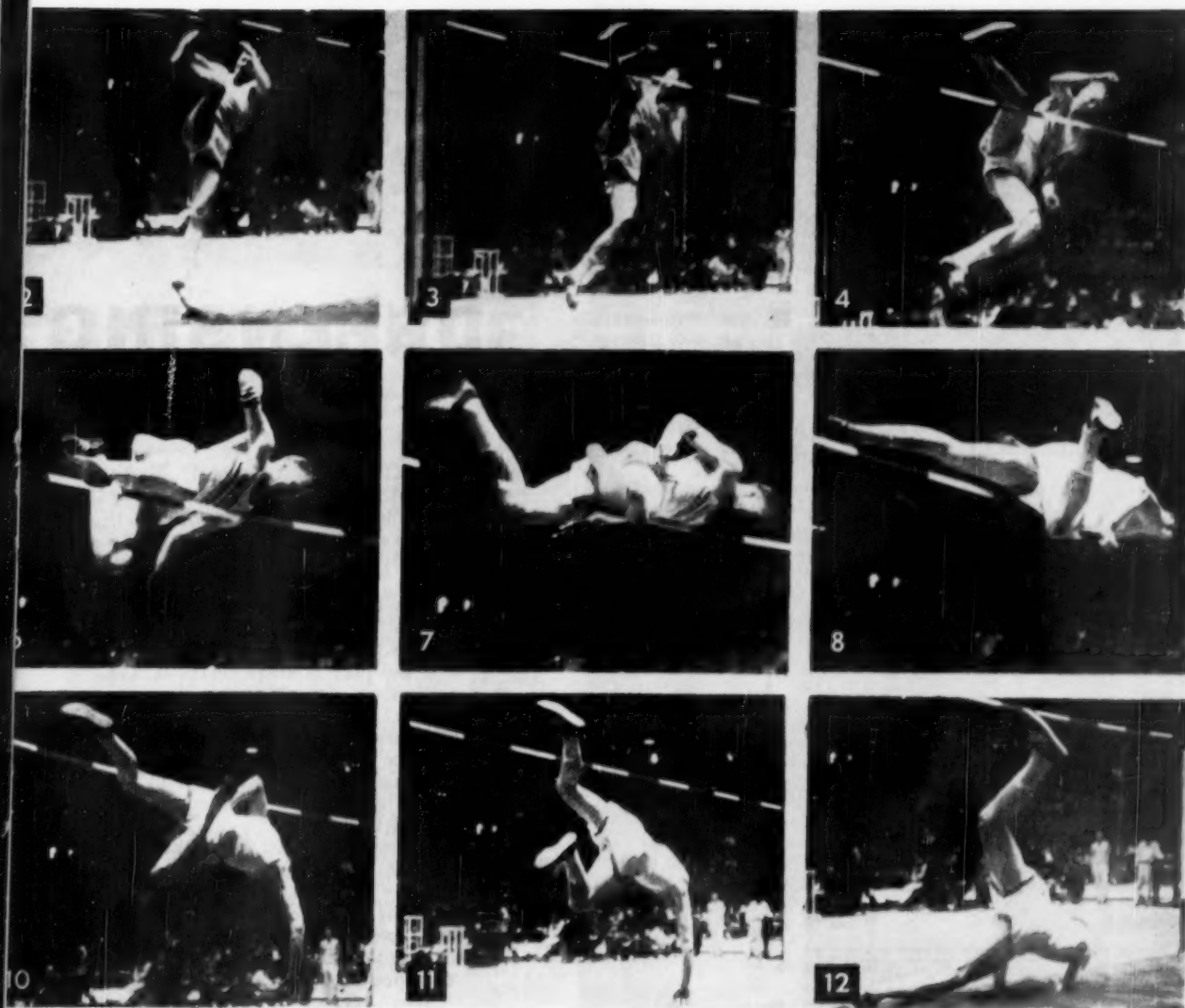
er when he zig-zags than when he doesn't makes this an important part of his jump—but not necessarily important to anyone else.

Since his jumping effort is straight up, the slight drive to his left on the take-off which this feature affords him might very well be essential to carry his body across the bar.

The three most important features of Hall's style are:

1. The extreme backward lean as the take-off foot hits the ground.
2. The vigorous kick-up of the opposite leg.
3. The rotation of the body about the bar.

Nothing new is involved. His action is almost identical with that of Les Steers. Strangely enough, this very close similarity is entirely coincidental. Hall was not taught to copy Steers. He just naturally jumps that way.



Actually, the backward lean and kick go together. It's difficult to achieve one without the other. Together, they permit the jumper to convert practically all the forward momentum of his run into upward momentum.

The jump is upward with very little travel along the bar. This means that in crossing the bar, the body maintains its maximum height for a minimum length of time.

While the kicking leg is straight at the start of the kick, no effort is made to keep it straight. The leg is relaxed and will break naturally at the knee as its action progresses. The direction of the kick is a continuation of the line of approach.

It's difficult for most jumpers to achieve a free and easy backward lean. They instinctively want to "buck" forward against the kicking  
(Concluded on page 78)

### BELLY-ROLLING OVER 6-7½ IN COMPETITION

**NO. 1:** While this doesn't show full extent of backward lean as left foot is planted for take-off, it does show start of vigorous kick with right leg, which is straight at this point. Though left toe appears turned in toward bar, it's actually in line with Hall's approach—and so is kick.

**NO. 2:** Kick adds materially in lifting body upward. Arm-lift is natural; no attempt is made to throw them up. Center of gravity is directly over jumping foot as Hall leaves take-off.

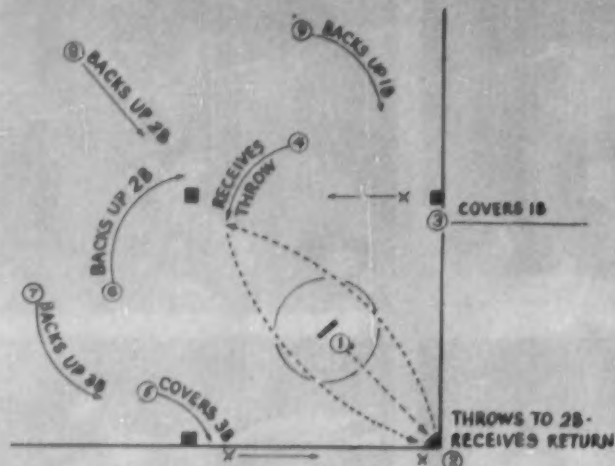
**NO. 3:** Hall goes straight up; there's very little travel along bar.

**NO. 4:** Jumping leg is lifted naturally from ground and follows body.

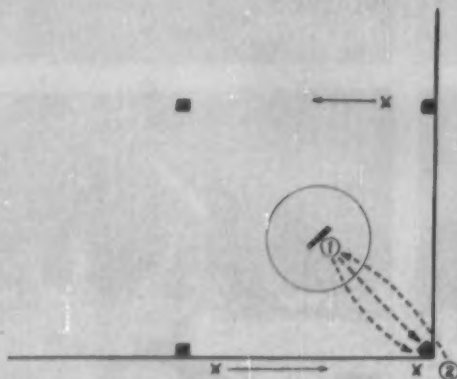
**NOS. 5-8:** Rotation of body around bar. No. 8 shows a straightening of left leg, which isn't characteristic of Hall's style. It should retain about same degree of bend as in No. 7.

**NOS. 9-10:** Completion of body roll around bar. Note that if left leg were bent, there'd be little likelihood of hitting bar with it.

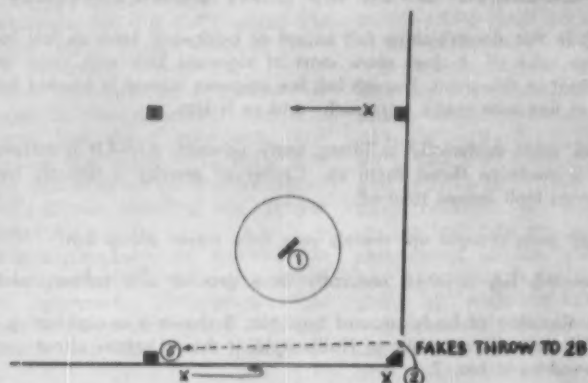
**NOS. 11-12:** Rotation of body on top of bar continues into landing. Straightening of left leg has reduced degree of rotation Hall ordinarily achieves, so that he isn't landing as much on his right side as usual.



**OPTION 1:** Second baseman or shortstop is key man. He catches ball about a stride in front of bag, then tags incoming runner or throws home.



**OPTION 2:** Ball goes from catcher to pitcher back to catcher. If runner on third gets hung up, pitcher runs at him to make runner commit himself.



**OPTION 3:** Catcher fakes throw to second with full motion, then looks at runner on third. If man is hung up, he chases him back toward base.

## DEFENSING T

**G**ET the front runner!" That's the basic principle of a good double steal defense. This is comparatively simple when the runners are on first and second or on second and third. The catcher throws the ball to the third baseman or the pitcher throws it to the catcher.

If the play is made correctly and a rundown doesn't ensue, the runner is tagged out after one throw. Of course the pitcher must not permit the runners to get too big a lead and the throw must be fast and accurate with the receiver making a good tag.

Defending against the double steal becomes a real problem when the runners are on first and third. Instead of a simple throw to the most advanced base, the catcher has several options and it may take more than one throw to put out a man.

What choice the catcher will make depends upon the score, the skill of the defense, the hitter, the inning, and how the coach or manager wants to play it; in other words, the total game situation.

It's common knowledge that the lower the classification of play, the easier it is to steal a base—whether it be a single, double, or triple steal. While the runner must be given credit for the steal, many bases are stolen because of poor defense rather than good offense.

Many a "phenom" steals 30 or more bases in Class D or C, 20 to 30 bases in Class B or A, and up to 20 bases in Class AA or AAA. But when he reaches the majors, he's fortunate if he can steal 10 bases. How come? Because he has suddenly lost his speed? No! Because the defense is better. The pitchers keep him from getting a big lead and the throws are faster and more accurate.

This is also true in amateur baseball. Generally speaking, the young-



# THE DOUBLE STEAL

er the players, the more the steals. Can you imagine the confusion that would result in Little League Baseball if runners were permitted to steal on the pitcher instead of having to wait until the ball has reached the batter!

A walk plus a steal is equal to a two-base hit and, where it happens often enough, imposes a terrific strain on the defense. This situation would occur frequently in Little League if the aforementioned steal rule hadn't been adopted.

The double steal with runners on first and third would be almost automatic, as it takes two good throws and perfect ball handling to get the runner going home. It's a difficult enough play for mature players, and it's no wonder that youngsters have trouble with it.

A team has three options to choose from in defending against the double steal. The particular choice depends upon the skill of the defense and the importance of the potential run on third base. Whatever option is selected, it's necessary for the defensive players to be aware of it in advance so that every player will know what to do.

This requires a simple set of signals. While some of the players perform the same tasks no matter what option is used, other players—notably the catcher and pitcher, and possibly the shortstop and second baseman—have different assignments depending upon the option exercised.

## OPTION #1

The most popular way to defeat the double steal with runners on first and third, is to have the catcher throw the ball through to second base and have either the second baseman or shortstop return the ball to him, depending upon which player covers the bag.

The second baseman usually covers if there's a right-handed hitter at the plate, while the shortstop covers if a lefthanded hitter is up. Some coaches, however, have the player with the strongest arm covering the bag and throwing the ball back to the catcher. Since the shortstop position requires a stronger arm, the coach may designate that player to cover the bag on all double steals, particularly if the second baseman has a weak arm.

In the higher level of ball, the type of hitter (i.e. opposite field hitter) and the type of pitch are also considered. This doesn't mean that such details are necessarily overlooked in the lower classifications, but that sometimes a team plays an opponent only once or twice and scouting reports aren't usually available.

What is the assignment of each defensive player in this first option?

**Catcher:** After he receives the pitch, he takes a quick look at the runner at third to make sure he doesn't have too big a lead. If the runner can be picked off third, naturally the catcher throws to the third baseman. If the runner doesn't have too great a lead, the catcher makes his regular throw to second base, alert for a return throw and tag play.

**Pitcher:** The pitcher is alert to make sure he doesn't get in the way of the throw from the catcher or the return throw to home. He can duck if he deems it necessary. After all, he's standing on a mound in a direct line of fire from home plate to second base. He doesn't want to get hit on the back of the head or force his teammate to make an inaccurate throw to avoid hitting him.

**First baseman:** He's already in good fielding position, since he's holding the runner close to the base. He should be alert for a possible

rundown play involving the runner going to second base.

**Second baseman:** If he takes the throw from the catcher at second, he stations himself so that he can handle the play—either the return throw to the catcher or a tag at second base. This means that he stands about six feet in front of the bag toward the pitcher's mound. The choice of play rests with him. The shortstop doesn't tell him where to throw the ball.

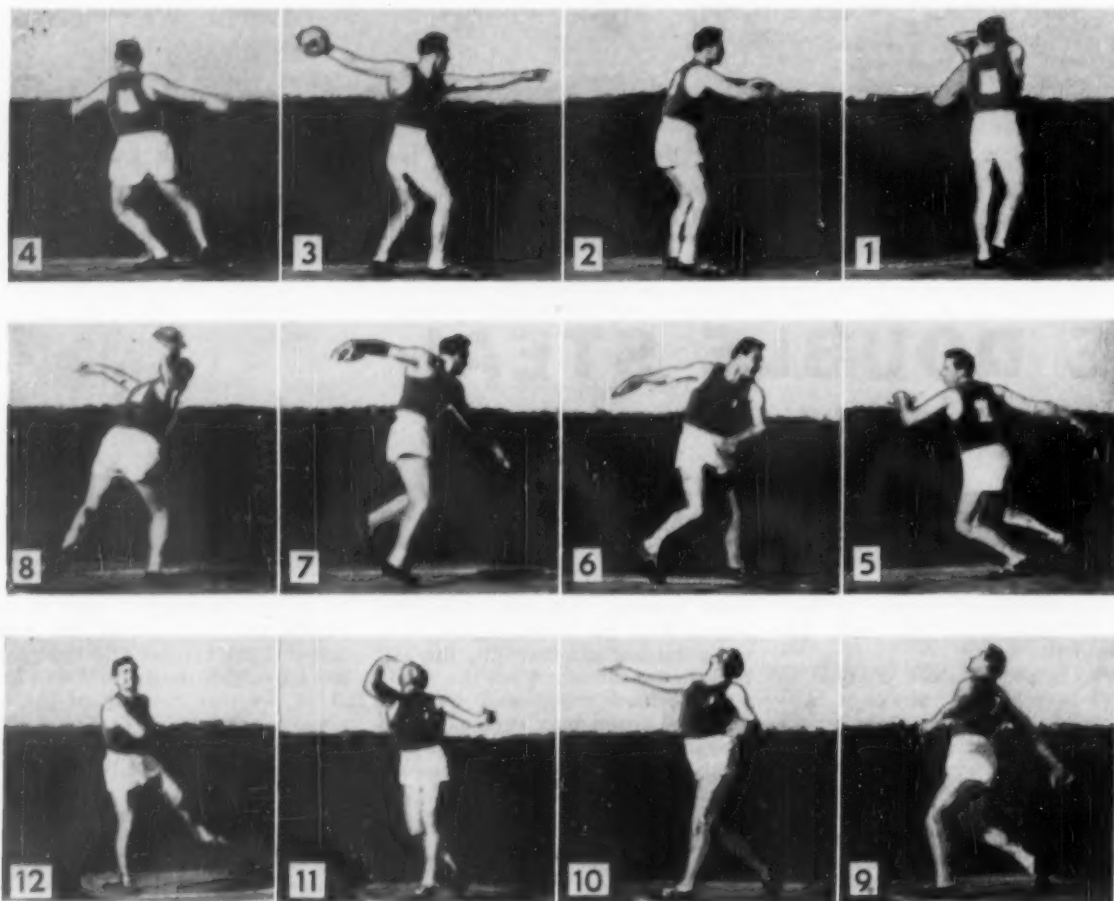
This procedure is much superior to the old double steal defense where one infielder went halfway between the pitcher's mound and second base and acted as a cut-off man, while the other infielder covered the base and yelled, "Cut it off!" or "Let it go!" Double steal defense requires split-second timing and should involve as few defensive players as possible.

The second baseman has the play before him. He throws the ball back to the catcher if the runner on third breaks for home, or he tags the runner coming from first if the runner on third holds.

If the runner advancing to second slows down and gets caught in a rundown, the second baseman and other members of the defense must be alert to the runner on third while running down the runner caught between first and second. It's stupid to concentrate on the rundown and permit the runner on third to score.

**Shortstop:** The shortstop goes to the centerfield side of second base and backs up the throw from the catcher. If the hitter is left-handed, the shortstop and second baseman can reverse positions and duties—the shortstop covering the base and taking the throw while the second baseman backs him up.

**Third baseman:** The third baseman covers the bag for a possible throw from the catcher and is alert  
(Continued on page 52)



### ADOLFO CONSOLINI, Italy: Best Throw—186'11¼"

At age 39, the 1948 Olympic champion shows no sign of decay. In fact, 1955 was his greatest season ever! He competed in 29 meets, lost only once, and unfurled the third longest throw in history—186'11¼".

**NOS. 1:** Back to direction of throw—body relaxed, weight over left foot.

**NOS. 2-3:** Discus swept naturally (not rushed) as far to right as possible. Body weight shifts over right foot. Shoulders, right arm, and trunk rotate freely to right.

**NOS. 3-4:** Start of turn: Body weight shifts back to left. Left knee bends to help generate momentum to carry thrower over to and around left leg into initial spin. Slight bend forward from waist. Head slightly to left (but not too far).

**NOS. 4-5:** Spin way around left foot; left knee bends a little more.

**NO. 5:** Weight seems to concentrate over left foot for an instant. Eyes facing direction of throw. As momentum starts to carry you forward, in direction of the throw, spring forward (not up) quickly from left foot in direction of throw.

**NOS. 5-8:** Both feet off ground. Important to get both

back on ground as quickly as possible. Can exert no force on discus with both feet off the ground.

**NO. 8:** Right foot lands. Right knee *already* bent. When right foot lands, don't bend right knee further. It merely wastes time at moment you need maximum speed. When right foot lands, toe should be pointing directly back, opposite to direction of throw. Left foot must land as soon after right as possible. When left foot lands, *head and shoulders must still be facing directly to rear*, much more so than shown in this picture. Throwers must practice hitting this position again and again.

**NOS. 8-9:** Let body momentum carry body weight onto bent left leg while discus is still as far back as possible. Head facing forward in No. 9, not to left.

**NOS. 9-10:** Entire body whips discus through long finish position. Arm acts as whip, not main pulling force. Left leg (not right) activates entire lift and straightens only when body weight is over it.

**NO. 11:** Reverse starts here. Its purpose is to check forward momentum to prevent fouling. Important to check momentum only after it has been used to whip the discus. Therefore, do not reverse until discus has been released.

# Served on a Platter

By SAM FELTON, Jr.

**T**HERE are many ways of hurling a discus. Several throwers—and I use the term loosely—whirl about the circle like a dervish gone mad, while others stumble through several half-hearted pivots, come to a complete stop, then tug furiously at the discus.

Then there is the strange, rare, orthodox individual who merely executes a simple quick spin and, with little apparent effort, whips the platter out of the park.

Why? How? I hope what follows will shed some light on these questions.

**How Far Should You Throw?** Some athletes are naturally stronger and faster than others, and their results in any throwing events should exceed those of their less-endowed compatriots. In the discus, generally speaking, a well-executed turn should add at least 20 to 25% to the distance you can throw from the stand. If you cannot achieve at least a 20% gain, something is fundamentally wrong with your turn.

The following table will help you determine how far you should throw a discus from a turn based on the distance you can throw from a stand:

Throw from a Stand	Throw from a Turn	
	Average	Maximum
110'	132'	137.5'
120'	144'	150.0'
130'	155'	162.0'
150'	180'	187.5'
160'	192'	200.0'

For example, if you can throw 130' from a stand, you should hit between 155' and 162' from a properly executed spin. An exceptionally fast and well-coordinated thrower might do even better.

My main purpose in presenting this chart is to help you determine whether or not you're getting all you should out of your turn. If you're not, then you can see how much improvement lies ahead of you.

**What is a Good Throw?** A good discus throw must be made up of a fast, simple turn which will carry you with the maximum body momentum to a strong throwing position which will permit you to exert a long and

powerful pull on the discus through the entire finish. Let me explain what I mean as I have chosen these words carefully.

... A fast, simple turn ... The purpose of the turn is to bring you into a strong throwing position while moving with as much speed and momentum as possible. Thus, everything you do in the circle must in some way serve to make you (and the discus) spin faster. To do this, your movements must be simple and direct.

I've seen far too many would-be

throwers introduce some of the craziest, most inefficient and unnatural contortions into their turns. Each of these superfluous movements merely makes the throw more complicated than necessary and slows down the overall action.

Therefore, when practicing, think through exactly what you're doing during the spin. Continuously ask yourself, how can I move faster? What unnecessary motions can I eliminate? How can I make the discus move faster? How can I spin into a



**A Powerful Finish:** Sim Iness, 1952 Olympic champion and holder of the second longest throw on record, is shown in perfect throwing position. Note how he's over his left leg, while the discus is still way back; and study his head position. You can almost feel the "long pull" Iness exerts on this discus during his powerful finish. (World Wide photo)

stronger throwing position faster? How can I make my turn smoother and more rhythmical?

Look at the excellent sequence of Consolini. Here is a truly remarkable man. He's a husky 240 pounder, 39 years old, and still improving! In 1955, he officially threw his best effort, 186' 11 1/4", and posted a 187' 11 1/4" exhibition throw during the same year.

Several things impressed me when I last saw Consolini throw. To start with, I've never seen a simpler or more effective turn. Consolini isn't an exceptionally fast man, but he gets as much behind the discus as any thrower. His entire throw is relaxed and rhythmical. He constantly accelerates from the initial pivot through the release. His throws are all one motion from start to finish, and at no point does he pause even for the briefest moment.

Each of his throws is exactly like the last, and Consolini's distances are remarkably consistent. He has grooved his discus throw as well as Ben Hogan has grooved his famous golf drive. I've long envied the simplicity and directness of Hogan's strokes and can readily see the same quality in Consolini.

... which will carry you to a strong throwing position ... Let's look more carefully at the pictures of Consolini.

1. Notice how he pivots first over to and then around his left leg in picture 4. Too many throwers take a short-cut here and rather than spinning around their left leg, they break across or through it. During the turn, you should try to move the discus through a wide path. The longer the path, the more work you can exert on it.

To do this, your body, too, must move through as wide an arc as possible. Also, if your discus moves through a wider arc than your body, it will be easier to arrive at a strong throwing position well ahead of the discus, thereby creating a strong tension or "differential" between your lower and upper body which will help whip the discus on its way.

2. Visualize the movement involved in carrying Consolini from pictures 3 to 5. You should almost feel how his momentum carries him over to and around his left leg. Notice that his center of gravity falls to the left of his left foot.

3. Visualize the quick pivot or glide from pictures 5 to 8. In 5, Consolini's weight is concentrated over his left foot. At the instant this picture was taken, his eyes were facing the direction of the throw. With a slight forward spring from this position, from his left foot, Consolini moves forward slightly while rotating his body through 180° and lands again on his right foot.

Almost immediately after his right foot lands (with his right toe pointing directly back), his left foot lands. As soon as his left foot lands, his head and shoulders should be facing more to the rear of the circle than shown in picture 8.

## 10 BEST DISCUS PERFORMANCES

(Source: Track and Field News)

194' 6"	Fortune Gordien	U.S.A.	8-22-53
190' 0 1/4"	Sim Iness	U.S.A.	6-20-53
186' 11 1/4"	Adolfo Consolini	Italy	11-10-55
186' 0	Karel Merta	C.S.R.	11-15-55
184' 1 1/4"	Parry O'Brien	U.S.A.	5-14-54
183' 0 1/2"	Ferenc Klics	Hungary	7-4-54
182' 1"	Otto Grigalka	U.S.S.R.	11-14-55
180' 8"	Jim Dillion	U.S.A.	6-5-54
180' 2 1/4"	Bob Fitch	U.S.A.	6-8-46
179' 9 1/2"	Giuseppe Tosi	Italy	8-22-48

Actually, this is the most important position of the entire throw. When you complete this half-turn (as soon as your left foot lands), your shoulders and discus must be as far behind (or to your right) as possible, before the start of the final sweep, thereby permitting a long and powerful whip of the discus throughout the finish.

During this half-turn, notice how Consolini's arms, shoulders, head, hips, and even legs remain nearly in the same relative position to each other. He doesn't twist his head to the left or swing his left leg through a wide arc. The entire half-turn is quick and simple.

During practice, you must practice this pivot incessantly. Try this. Without the discus, assume the position shown in picture 5. Bring your right foot alongside your left. Hold this position for a moment. Make sure you're in perfect balance with your left knee bent, shoulders and discus away back with your right arm relaxed, eyes horizontal and facing the direction of the throw, and your left arm comfortably relaxed in front of your chest.

Rock up and down very slightly on your left leg to help feel properly balanced and relaxed. Don't bend too far forward at the waist.

### LEAN FORWARD AND SPRING

Now lean forward slightly, letting your body weight start to fall forward in the direction of the throw. Just before you actually start to fall forward, spring forward slightly from your left foot taking a half-turn so that you will land in approximately the same position shown in picture 8.

Actually your right foot should land first with your right knee already bent. As your right foot lands, don't bend your right knee any farther. Your left foot should land as soon after your right as possible, and the sooner the better.

Your right foot should land a few inches to the left (facing in the direction you're throwing) of a diameter drawn directly through the circle in the direction of the throw. Your left foot should land just a little to the left of your right foot close to the forward edge of the circle.

As you land in this position, hold

it. Do not move. Your eyes must still be horizontal, but facing directly back (much more than shown in picture 8), facing directly opposite to the direction of the throw. Your left arm should be relaxed, but more in front of your chest than is shown in picture 8.

Actually, your right arm and discus should be pointing almost directly in the direction you intend to throw. That is how much you should be coiled before moving through the finish position.

Repeat this sequence over and over again. Emphasize hitting a perfect position. After you can perform this simple sequence, start the action from the position shown in picture 1. Continue to stop the sequence as soon as your left foot lands after the spin.

Work continuously trying to make this pivot as smooth and rhythmical as possible ... strive for more speed ... start faster ... spin well onto and around your left leg at the start of the pivot, then quickly shift through the half-turn to the start of the throwing position.

If you can do this successfully, then you will have created a strong "differential" between your upper body (facing to the rear), and your lower body (which will be about 90° ahead of your shoulders) before you move through the finish position.

During an actual throw, this strong "differential" plus the tremendous speed and momentum generated through your spin will be sufficient to pull your upper body from position 8 onto your left leg and then through a powerful finish.

... which will permit you to exert a long and powerful pull on the discus through the entire finish ... During the finish, you must translate all the speed and momentum you've generated during the turn into a long and powerful whip of the discus. Unless you pass through a long, strong and effective throwing position, all the speed in the world won't help you throw the discus far.

Conversely, the strongest finish in the world will go for naught unless you bring an appreciable amount of discus and body momentum into it.

The accompanying picture of Iness illustrates far better than words all that can be said about a good throw-

(Continued on page 47)



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By **CARL OLSON**

*Track Coach, University of Pittsburgh*



## Organization of Practice for Track and Field

**T**HE purpose of a well-organized track practice is to work the athletes into the best physical and mental condition for the day of competition. The starting point, of course, is a thorough physical examination. Before being permitted to work out with the squad, every boy should be checked by a competent physician.

The practice period should never exceed two hours—from the time the boy starts donning his workout apparel until he leaves for home after showering and dressing.

Though most schools and colleges conduct practice between the hours of 3:00 and 6:00, it isn't always possible to adhere to any specific schedule. Because of late classes and lab periods, it's often necessary for the coach and athlete to make special arrangements.

Before practice begins, the running track should be put into good condition. It should be properly lined and rolled to eliminate all ruts or holes which might cause turned ankles or other leg injuries.

The same provisions should be made for all the runways in the field events. To prevent injuries, the jumping pits should be dug up every day.

It's also important to lay in a supply of clip-boards (with paper and pencils) to keep notes on all performances, and to have several stopwatches on hand. Managers should be responsible for these details. With all these items attended to, practice can be better organized.

Assuming that the coach can get 75% of his squad together for two hours at the same time, the afternoon schedule can be broken down as follows: 15 minutes for undressing, 90 minutes for the workout,

and 15 minutes for getting into street clothes again.

One of the most essential points in organizing for practice is to see that everyone is kept busy. Too often you find half the squad marking time while the other half is working. To be of any value, practice must be continuous.

Each boy should be properly dressed when he comes out for practice. That includes sweatsuit, uniform, supporter, spikes, and flats. Boys in the jumping events should have rubber pads for their heels. Since a heel injury takes a long time to heal, coaches shouldn't allow the athlete to jump without this protection.

### WORK ON FUNDAMENTALS

The work on fundamentals constitutes the most important phase of a well-organized program. By "fundamentals" I mean conditioning work, knowing and practicing the right form, proper warming up, and enthusiasm for the program prepared by the coach.

As soon as the squad reports, everybody—including field men—should take several laps around the track. They may swing their arms as they run, get their knees up high, and perform a lot of different movements which put all the muscles into play.

After the jogging, it's wise to program 15 or 20 minutes of loosening-up exercises. All these exercises should be led preferably by the veterans on the team rather than the coach.

These may be done in unison or each athlete, after he has learned the exercises, can do them individ-

ually. The duty of the coach is to observe what each individual is doing and counsel him regarding the amount of work he should be doing.

Warm-up exercises should be of the stretching, bending, and twisting variety. Ballet dancers do a lot of these and how often do you hear of any of them with pulled muscles?

One exercise which makes for loose hips is to stand with hands on hips and move the hips from one side to another. Simulated bicycle riding while lying on the ground is another good hip flexibility exercise; and hurdle exercises, knee-lifting exercises, trying to touch the stomach with the knees, alternate touching of toes with knees straight also are very valuable.

Many others can be added to this repertoire as the athlete learns the value of them and becomes more and more exercise-conscious.

After the warm-ups are completed, the runners should start striding. Striding is done at about three-quarters speed. This is the time to study proper leg, body, and arm action. When a man strides properly, he creates the impression that he's rolling along effortlessly, regardless of how much effort he's actually putting forth.

The striding period may last for 10 to 20 minutes. The striding distance varies. For sprinters, hurdlers, and quarter-milers, the distance can usually be from 75 to 130 yards. For middle-distance and distance runners, it can be from 150 to 300 yards.

Each boy should study his own form and that of his teammates. The more the boys observe each other, after the coach has taught the correct form, the better they'll perform.

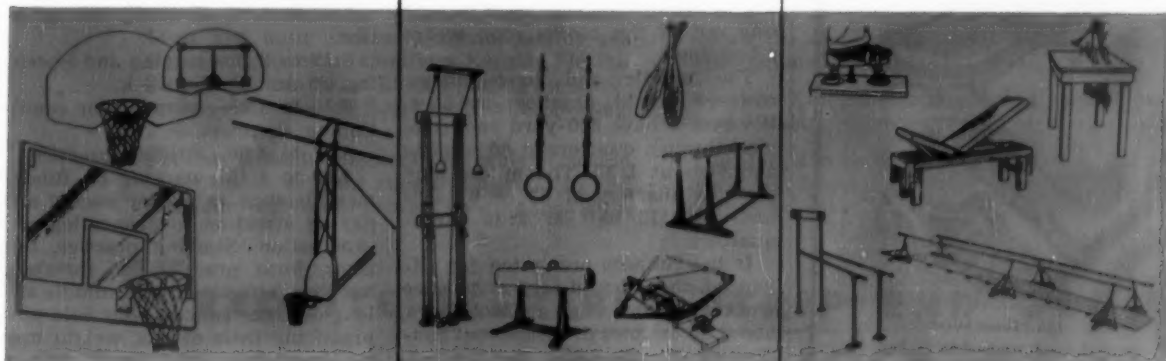
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Most boys learn more by con-  
 tinual discussions with their team-  
 mates than through constant admoni-  
 tion by the coach. Instructors  
 should remember that too much  
 talking is wasteful and athletes  
 benefit little from it.

Many young coaches try to tell an  
 athlete all they know at one prac-  
 tice. This is poor coaching. The in-  
 formation given piecemeal is much  
 more easily assimilated. Athletes  
 also learn much through trial and  
 error, which can be classified as ex-  
 perience. Very few coaches are able  
 to teach all the finer points of all  
 events.

By the time the runners have  
 done their jogging around the track  
 and finished the warm-up exercises  
 and striding, they're ready to work  
 at their special events.

The sprinters, quarter-milers, and  
 hurdlers should go to their marks  
 and practice starts for 15 to 20 min-  
 utes. The hurdlers should then  
 practice over the barriers, always  
 stressing proper form. As hurdling  
 is a skill event, it's impossible for  
 a boy to practice this event too  
 much.

Each man should practice by him-  
 self, working on the correct posi-  
 tion of getting on the marks, get-  
 ting set, and darting off with the  
 gun. After a dozen short practice  
 starts, the gun may be used for  
 starting. It's essential to start with  
 the gun at least three times a week.  
 Too much starting isn't desirable,  
 as the explosive power used in get-  
 ting out of the blocks soon wears  
 a boy down.

The middle and long-distance  
 runners should practice on pace.  
 It's well to have 880-yard men run-  
 ning through quarters at 60 seconds  
 and 660s at 1:30. The milers may  
 practice quarters at 62 or 63 sec-  
 onds, a 2:15 half or 3:30 three-  
 quarters.

If the runners aren't too far ad-  
 vanced, they should take endurance  
 workouts. For high school boys,  
 about 20 minutes of in-and-out run-  
 ning is recommended. For the col-  
 lege boys, 45 minutes is recom-  
 mended.

In the in-and-out running, the  
 athlete may sprint and jog various  
 distance. For example: run 220, jog  
 220, 300 sprinting at  $\frac{3}{4}$  speed, 300  
 walking or jogging, 440 in 65, jog-  
 ging a quarter, and so on.

The most important thing to re-  
 member is that there should be con-  
 tinuous action during the whole 20  
 minutes (for high school boys) or  
 45 minutes (for college men). The  
 older athletes in Europe usually  
 spend about two hours on this type  
 of preparation.

The pole vaulters and broad and

high jumpers should be working on  
 the proper number of steps to the  
 takeoff. Practicing for form at  
 heights and distances which can be  
 attained easily, is essential. In the  
 high jump, form should be prac-  
 ticed incessantly. In my opinion, it  
 isn't wise to jump for best heights  
 and distances at every practice.

In the weight events, the athletes  
 should be working on the proper  
 hand-holds, the position of the feet,  
 and the delivery.

Shot-putters and discus throwers  
 should always practice in the circle,  
 while the javelin throwers should  
 continually keep checking their  
 marks.

For weight men, weight-lifting is  
 helpful (not the competitive type)  
 for developing the upper body and  
 legs.

In working on the relays, 20 min-  
 utes of intensive practice on baton  
 passing is necessary. To make mat-  
 ters interesting for the regulars, it's  
 sometimes wise to give a second  
 team an advantage of a few yards,  
 depending on the relay distance.

To get speed out of the weight  
 men, try some short relay races.  
 They make practice more interest-  
 ing for them.

### TIME SCHEDULE

The time schedule, then, for a  
 day's practice can be summed up as  
 follows:

3:00 to 3:15—dressing for prac-  
 tice.

3:15 to 3:25—jogging and loosen-  
 ing up around the track.

3:25 to 3:45—warm-up or condi-  
 tioning exercises.

3:45 to 4:00—striding practice.

4:00 to 4:45—working on funda-  
 mentals such as proper pacing and  
 paying attention to proper leg and  
 arm action. Starting practice, fin-  
 ishes, form practice for sprinters,  
 hurdlers, quarter-milers, middle and  
 long distance runners. For field men  
 practicing their events, weight men  
 to check their foot work, proper  
 method of holding implement and  
 final delivery. For jumpers to check  
 their take-off marks and practice  
 form.

4:45 to 5:00—dressing, shower,  
 and home.

The practice organization as out-  
 lined above won't take too much  
 of a boy's time. He'll know his  
 events well and will be properly  
 conditioned. His health will be ex-  
 cellent and his studies will improve.  
 The routine makes for good habits.

Any athletic practice conducted  
 in a sane manner with the boy's  
 welfare in mind at all times, is very  
 rewarding for athlete and coach.





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# INTERVAL TRAINING

**I**N MY introduction to interval training last month, I stressed the necessity of understanding the four variables in this form of training, namely:

1. An exact repeated distance that remains unchanged in any single workout.

2. A recovery interval of time during which restful jogging occurs.

3. A pace at which the distance is covered, always under a watch.

4. The number of times that this distance is repeated.

I also expounded a set of six basic principles and cited the importance of the coach and athlete working together.

Runners should understand, first, that conditioning for running is primarily a matter of building resistance to the many effects of fatigue (production of lactic acid, lowered oxygen supply to the muscles, decreased sensitivity of muscle fibers to stimuli, etc.). This is done by gradually increasing, as muscle efficiency improves, the amount of work that is done, much as one gives increasing dosage of vaccine in building resistance against certain diseases.

As with various vaccines, nature overcompensates or over-protects and creates a counteracting force beyond the needs of the moment. This gradual increase in work-load, with resultant over-compensation, continues indefinitely through the months of a single year and through the years of a man's competitive career.

If done gradually, no strain of muscle or organ occurs. Yet in time the power to neutralize that can be established is amazingly high: even today we do not seem to be ap-

proaching the limits of men to benefit from more and more of the right kind of running.

The efficiency of running, in terms of fatigue, decreases to the 4th power as pace increases. That is, if we double the speed of running, the oxygen requirement of muscle increases eight times. It's easily understood then, that when practice

time is limited—as with most amateurs and students—doing speed work in practice produces fatigue and, consequently increases resistance to fatigue much more quickly than slower paced running.

Further, it has been observed that in slower pace running, men are more conscious of the feelings of fatigue and tend to slow their pace before becoming really tired physically.

For these and other good reasons, distance training has gradually made increasing use of practice runs that are faster than competitive pace. Thirty years ago, we called such a method "ins and outs"; later it became "wind sprints"; ten years ago everyone was doing "repeated speed work"; even "Fartlek" is a

**TABLE 1, Short-Interval Pace-Endurance Workouts**

Event	Meet Time	Practice Distance	Average Speed	Number Repetitions	Jogging Interval
2 mile	9:20	mile	4:40	Start with	A fixed
		880	2:20	two: increase	time:
		440	:70	as condition	5 minutes
mile	4:16	880	2:08	improves	or
		440	:64		less
880	1:56	440	:57		
		220	:28		
440	:50	220	:24		

**TABLE 2, Short-Interval Speed-Endurance Workouts**

Event	Meet Time	Practice Distance	Average Speed	Number Repetitions	Jogging Interval
2 mile	9:20	880	Increasing	5	A fixed
		440	as		time:
		220	condition		3 minutes
mile	4:16	440	improves		or
		220			less
880	1:56	220			
440	:50	220			

**TABLE 3, Long-Interval Training**

Event	Meet Time	Practice Distance	Average Speed	Number Repetitions	Jogging Interval
2 mile	9:20	1½ mile	7:00	2 then 3	At least
		mile	4:30	as	20
		880	2:02	condition	minutes
mile	4:16	¾ mile	3:12	improves	
		880	2:00		
880	1:56	660	1:24		
440	:50	330	:36		

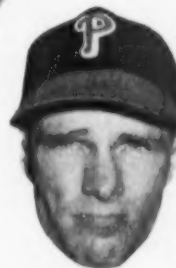
**By KEN DOHERTY**

Coach, University of Pennsylvania

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more modern use of this same idea.

Today's terminology, "interval training" is merely a carefully organized and well thought out adaptation of this same basic principle. At the beginning of this article four variables were mentioned that occur in interval training: distance, recovery interval, pace, and number of repetitions. Each of these must be carefully weighed when setting up a program.

What distance should a miler select for his basic training: something over a mile, one mile,  $\frac{3}{4}$  mile,  $\frac{1}{2}$  mile, 440, or a 220? No one distance meets all needs; each has certain advantages and disadvantages.

To train at a distance of over  $\frac{3}{4}$  mile means that the pace must be slower than competitive pace or that the recovery interval must be very long. Most coaches believe this to be undesirable. On the other hand, pace work at 880 yards provides a more satisfactory sense of continuous rhythm than does a shorter distance.

#### RECOVERY INTERVAL

In similar fashion, what recovery interval of jogging is best: one minute, two, three, five, twenty? There is no general or final answer to this. Stampfl<sup>8</sup> suggests that the interval should be long enough "for each fast run to be begun comparatively freshly."

This would mean that, if running ten repeated quarters, the recovery period should be lengthened as fatigue increases during the workout. This would defeat one of the basic purposes in interval running: the building of greater resistance to gradually increasing work-loads. To the best of our knowledge, no distance runner follows such a method. Most runners have arbitrarily adopted two minutes or three minutes or even five minutes as the most productive rest interval, depending upon the distance and speed of each repeated run.

Perhaps it's worthwhile to interrupt at this point to emphasize the fact that very relaxed jogging is the best possible method of making rapid recovery from fatigue as well as of avoiding muscle stiffness or soreness. Blood circulation and other processes of recovery are thus maintained at optimum levels.<sup>9</sup>

Yet, in at least one instance, there are values in extending this recovery interval to as much as 30 minutes. When running fitness is at a high level, a man may wish to run half or three-quarters of his racing distance at racing speed or even faster. Recovery now requires a longer interval of jogging.

For example, the writer noted every detail of this workout taken by Gordon Pirie on September 1, 1955, at the height of his training for the 10,000 meters distance:

1. Thirty minutes of warm-up (jogging with many easy wind-sprints and a few exercises).

2. A mile in 4:11.5.

3. Thirty minutes of jogging.

4. A mile in 4:15.8.

5. Thirty minutes of jogging.

6. A mile in 4:18.9.

7. Thirty minutes of jogging.

Pirie believes there are benefits derived, when one is in excellent condition, from this type of workout which could never result if the time interval were arbitrarily maintained at five minutes or less. Stampfl calls this procedure "repetition" running to distinguish it from the more common term "interval running."

The difference in meaning doesn't seem clear to the writer, hence his preference for the expression, "long-interval training" as contrasted with "short-interval training."

Long-interval training provides a tough workout, demanding great stamina from one's body, but equally, great toughness of mind toward the feelings of fatigue that are certain to be evident. It's this kind of toughness that puts one foot in front of the other when, in a highly competitive race, physical energies are apparently exhausted and only the will to go on seems to make further effort possible. For these reasons, all out long-interval training should be reserved for the later stages of the season.

To return to short-interval training, the writer has found it helpful to consider two types of workouts: pace-endurance work and speed-endurance work. In the first instance, the three factors of distance, interval, and pace are held constant; the fourth factor, number of repetitions, is constantly increased as condition improves.

#### PACE-ENDURANCE WORK

For example, a miler believes that by the end of the year he will be able to run a mile in 4:16, an average of 64 seconds per quarter. He will therefore establish this as the pace at which he will do all pace-endurance work.

Secondly, he decides that about half the racing distance is best when training for pace, so his practice distance is established at 880 yards.

Third, since his practice time is limited to about 60 minutes, and since he guesses he won't be able to run more than four or five such 880s in a single workout this year, he arbitrarily decides upon five min-

utes of jogging as his rest interval.

Early in the season, then, this miler will run as many 880s as he reasonably can (perhaps two or at most three) at a pace of 2:08, with a five-minute interval between each. Late in this same year, when taking this type of pace-endurance workout, the miler will still be doing this identical workout except that now his improved condition permits him to run three, four, or even five such 880s.

Such a method permits a measurement of improvement from week to week and month to month which is just as sensitive and exact in its way as is the single formal time trial over a set distance. Obviously all running and all interval jogging is checked by a watch and is recorded in detail for future reference.

#### SPEED-ENDURANCE WORK

The second type of short-interval training is called speed-endurance work. In this case the three fixed factors are distance, interval, and number of repetitions; the variable now is pace. For this workout, one-fourth the competitive distance seems best. For this reason, the interval can be shortened to three minutes. A longer interval gives too much recovery and too long a total workout before fatigue occurs.

Again, rather arbitrarily, the number of repetitions is set at five. This means the total distance covered under the watch (five times 440 yards) is greater than racing distance, a worthwhile realization. (A more mature runner might decide that seven is a more optimum number of repetitions.)

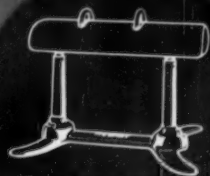
During early season then, this same miler who hopes to run 4:16 this year repeats five 440s with three minutes of jogging between at an average speed of, say, 66 or 68 seconds. During late season, he's still covering the same schedule, but now can achieve an average speed of 60 seconds, a pace that is definitely faster than racing speed.

Two weeks before Bannister<sup>10</sup> ran his first better-than-four-minutes mile, he was pleased to achieve ten 440s at an average speed of :58.9 during a total time of 50 minutes. This performance seemed to convince him that his condition was excellent, almost as much as did a  $\frac{3}{4}$  mile solo time trial in 2:59.9 in a high wind some six days later.

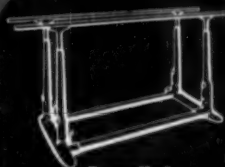
Is there a special value in the exact distance of 440 yards? Not at all, physically speaking. Johansson, fine Finnish miler, prefers to practice at 350 yards. If all of our



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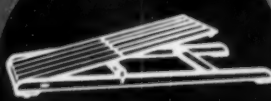


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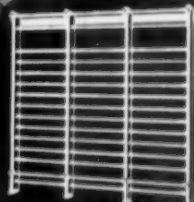
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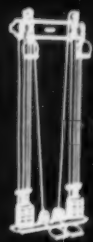
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work were done on an eleven lap indoor track, an exact three laps (480 yards) might well be accepted. One uses 440 yards then because it is the distance of a single track lap, or because it is one-half or one-fourth, or one-eighth the racing distance. Further, it's long enough to give one a sense of sustained running; yet short enough to permit much better than racing speed.

There's no important reason, then, why a miler or even a two-miler shouldn't occasionally adopt the 220-yard distance for his speed-endurance workout. It permits increased variety and interest, allows all distance men from 440 yards to two-milers to work together and does tend toward greater speeds.

Perhaps it's well to take time at this point to try to answer the question as to why speed is desirable and how it's best acquired. The need for speed during the final sprint to the tape is obvious: the more speed the better.

Of course the ability to run fast, of itself, won't necessarily permit a man to run fast when tired—at the end of an "all-out" seven-eighth of a mile, for example. Yet it seems logical, that of two men possessing equal stamina, the one possessing greater speed will have the faster finish.

But equally important, perhaps, physiologists suggest that there is a positive relationship between speed and endurance. In writing of strength - endurance, Morehouse<sup>11</sup> states:

When a light load is moved by a muscle, fewer fibers need to be brought into play. The remaining fibers are at rest and stand ready to act if needed in succeeding contractions. As the working fibers become fatigued during light work, the threshold of irritability is raised and these fatigued fibers fail to respond to the stimuli. The stimuli pass into fresh fibers whose irritability threshold is low and the burden of the work is thus shifted to the fresh fibers in the muscle.

It seems logical that, within certain limits, the greater the number of fiber groups that can be utilized in this way, the greater the endurance of the muscle. The problem then becomes one of increasing the number of effective fibers.

In untrained muscles, there are many latent or inoperative fibers, small from lack of use. Physiologists agree that strength exercises are the best way of activating such fibers: as strength increases, they also increase in size and effectiveness.

Sprinting is a strength exercise in the sense that it obviously requires more force — more strength of

muscle than is needed to run slowly. From this it follows that sprinting practice not only improves the power to pass or to finish, but also increases the efficiency with which muscles work at slower speeds.

By way of rebuttal, it's interesting to note that Stampfl places almost minimum emphasis upon speed training even though he's a strong advocate of interval training.

In his training schedules for the mile,<sup>12</sup> during an eight-month training program, he suggests only one workout at a pace faster than the four-minute mile on which he bases his figures. All workouts aim toward increasing stamina and, with a competitive season starting in May, he doesn't reach even racing speed (60-second quarters) until late April workouts.

Stampfl may well be more right than wrong in this point of view, though it's interesting to note that his most famous protege, Bannister, found an occasional 15 times 150 yards a very satisfying and important part of his training program.

## NO SERIOUS ARGUMENT

Fortunately, there need be no serious argument, for we don't have to choose between stamina and speed in our training. Rather the viewpoint can be: having provided in the training program for maximum stamina through the use of pace-endurance work or long-interval work, we can also acquire maximum speed by means of speed-endurance and sprint work.

To review the training program as recommended thus far, it will be recalled that a full cross-country season was suggested, preferably one in which tension from competition is at a rather low level.

Second, "fartlek" or some form of repeated but unmeasured speed work is worthwhile as part of cross-country training or as very early season track work.

Third, with little or no lay-off after cross-country, modified short-interval work should be started.

This short-interval work is of two kinds: pace-endurance training and speed-endurance training. In pace-endurance work, the variable that increases as condition improves is the number of times a given distance is repeated. In speed-endurance work, the variable that improves with condition is the average speed at which a set number of runs can be made.

Of these two types of workout, the writer believes that training at pace needs greatest emphasis and  
(Concluded on page 79)



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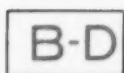
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# Good Tennis Is SIMPLE!

By DONALD KLOTZ, Tennis Coach, University of Iowa

**S**EVERAL summers ago, I walked puzzledly away from beautiful Stowe Stadium at Kalamazoo College where Ham Richardson had just won his quarterfinal National Junior Singles match with a beautiful exhibition of smooth, effortless tennis.

There had been something peculiarly striking about his game which I hadn't been quite able to identify. And then it hit me. *Simplicity!* It had been the utter simplicity of his game.

His strokes had been solid, but not hard. He had hit just a little deeper and a little more accurately than his opponent. His serves, volleys, and overheads had also been well-hit but simple—nothing fancy in form or spin. In this match, Ham had beautifully illustrated how simple a fine game can be.

If there are any secrets to winning tennis, they are desire, simplicity, and hard work. Closely allied to this trinity is steadiness. I don't mean "dinking" or "pushing" with no purpose other than to "get the ball back." I mean consistently stroking the ball with pace and direction.

It's axiomatic in all sports that "the team or individual that makes the fewest mistakes usually wins." This is particularly true of tennis; for, as the old master, Bill Tilden, put it "Tennis matches are always lost, they are never won." Matches are lost by errors, not won by placements—another bit of tennis simplicity.

The game of a fine player nearly always appears to be easy—simple—and it is. Now for the \$64,000 question: What can the average player do to make his game look and be equally simple? Here are the fundamental principles on which we

drill incessantly at Iowa, with both juniors and college varsity candidates.

1. **Aim every shot you hit.** Concentrate on your point of aim throughout your stroke to the end of the follow through. You'll really have to watch the ball to do this. As the ball leaves your racket, watch it toward your target, to your opponent's racket, and back to you. Keep this up as long as the rally lasts from your first warm-up stroke to the final point in your practice matches.

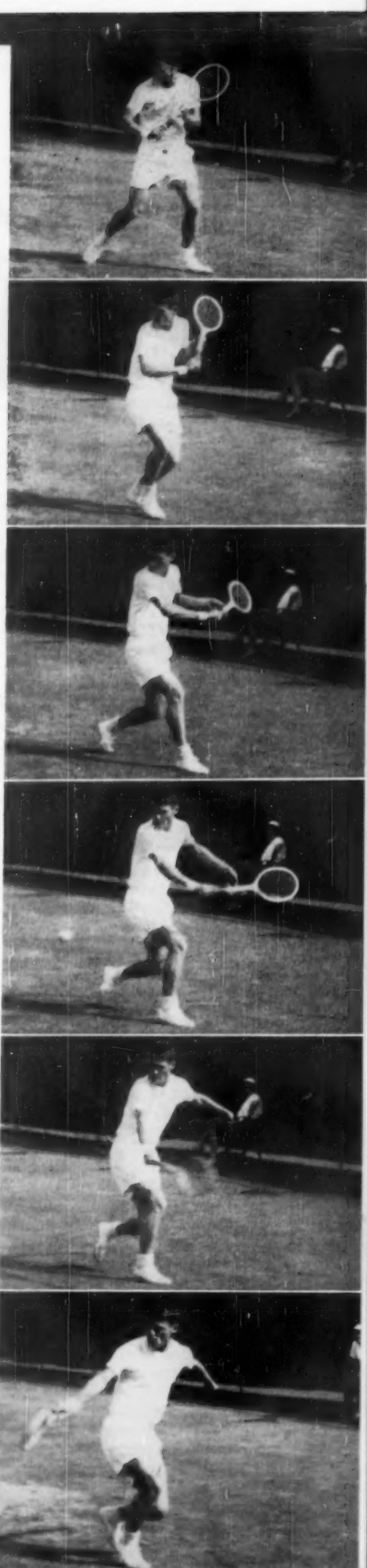
2. **Learn to play within your ability** on the day of the match. That is, don't attempt to hit the ball so hard or so close to the lines that you keep making errors.

How hard or how close do I mean? That will depend on the day. Here's an example. Yesterday, I watched a potentially fine player, a stranger to me, who came to our fieldhouse to practice with one of our juniors. He hadn't practiced for two months and now he was to get his first experience at playing indoors on boards.

The court on which he was to play

## BACKHAND BY FLAM

Herbie Flam, America's 8th ranking player, demonstrates the niceties of a smooth, simple backhand under actual competitive conditions. While bringing his right foot across into position, he swings the racket almost straight back with both hands. He then releases the balance (left) hand and brings the racket through almost parallel to the ground. Note how (1) the eyes stay glued to the ball right through contact, (2) contact is established with a full extension of the right arm, (3) the relaxed flexed knees brings Flam down to the ball, (4) the racket follows through naturally in the direction of the hit.





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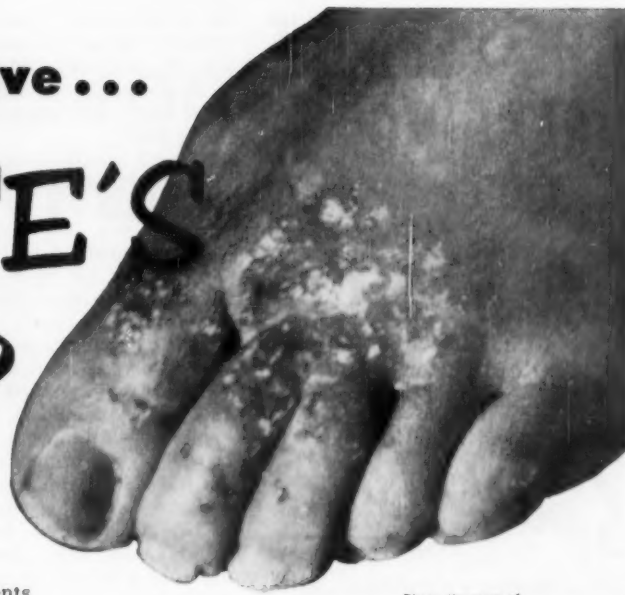


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As this waste (or sweat) accumulates on the feet, it begins to decompose. This heats and irritates the skin . . . and then the real trouble begins. At first, the only sensation is itchy, burning, uncomfortable feet. Later, abrasions and open sores appear between the toes and over the skin. You know the story from there, habitually sore feet, more students absent from classes, and a general unhappiness.

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was slow wood, as wood courts go, but it was faster than the clay on which he usually played. His timing was off, naturally, yet he attempted to stroke as though he had been on wood all his life and had been practicing daily.

Though he apparently was a hard hitter by habit what was the result? Each forcing shot he made on his opponent was offset by 5 to 8 errors. Yet he continued to bang away in this pattern for over an hour with no attempt to adjust himself. Strictly pathetic!

The boys began playing a match. He lost two sets by 6-1. Even after I carefully explained the situation to him, he couldn't resist taking chances — attempting to hit very hard or very accurate shots which he missed at the rate of about 6 errors to each placement.

This young man hadn't learned to make his game simple for him. He was making the situation very difficult and complex by attempting blasting drives, delicate spin shots, and crushing serves on a day he was unable to produce them.

His opponent, Larry, on the other hand, was making it simple for himself by playing well within his ability, seldom attempting really difficult shots. "How are you doing, Larry?" I asked shortly after the first set had ended.

"OK," he replied, "Carlos isn't steady. He makes too many errors. All I have to do is hit 'em back. I force him when I can but he gives me most of my points." Larry was making it simple for himself, while Carlos was laboring mightily on a very difficult game.

Learn to play within your ability rather than attempt a game that's too difficult for you. How can you tell when you're doing the latter? Simple! — whenever you're giving away more points through your own errors than your opponent is making by his placements. He isn't winning. You're losing, giving him the match on the proverbial silver platter.

3. Learn to play your opponent's weaknesses. This can be a complex proposition requiring a tremendous amount of coaching and experience in tournament play. But let's make it quite simple with just four questions:

(a) *How steady is your opponent?* Don't shudder whenever an opponent's forehand sizzles past you, if he's making two errors for each ace. Wouldn't you trade \$1 for \$2? Be willing to give your opponent a point on a placement if he'll return the point with a gift error and then add a bonus of another error. The score would then be 30-15 yours,

wouldn't it? Fair enough?

It's much more simple to win matches on opponent errors than by working desperately for your points by difficult and infrequent placements. Does playing steadily mean you'll get no forced errors or placements on your opponent? Far from it! Believe it or not, you'll score more of those cherished points than you'd ever expect. It becomes simple to get them if you wait for the right shot, the easy one, rather than try for great shots all of the time.

(b) *Which is stronger, his forehand or backhand?* With many high school and small college players, the backhand is extremely weak. If you can pound it consistently, you can win with ease. Play his forehand and you're in trouble. Most players hit forehands crosscourt in practice. That trains you to play your opponent's strength.

Learn to hit the forehand down the line, too, and get a good cross-court backhand so that you can hit his weakness. Not hard just deep. Watch him "tie up" as your shots land close to the baseline. A reminder! The backhand is usually the weaker stroke, but don't take it for granted. And remember that a left-hander's backhand is on his right!

(c) *Can you scare him into errors by going to the net whenever you have him pressed a bit?* Average players commonly over-hit badly against even an ordinary net man and will present him with a big bonus of net and out errors. They'll assume you're a great net man whether you are or not. Always? No, not always, but probably 75% of the time.

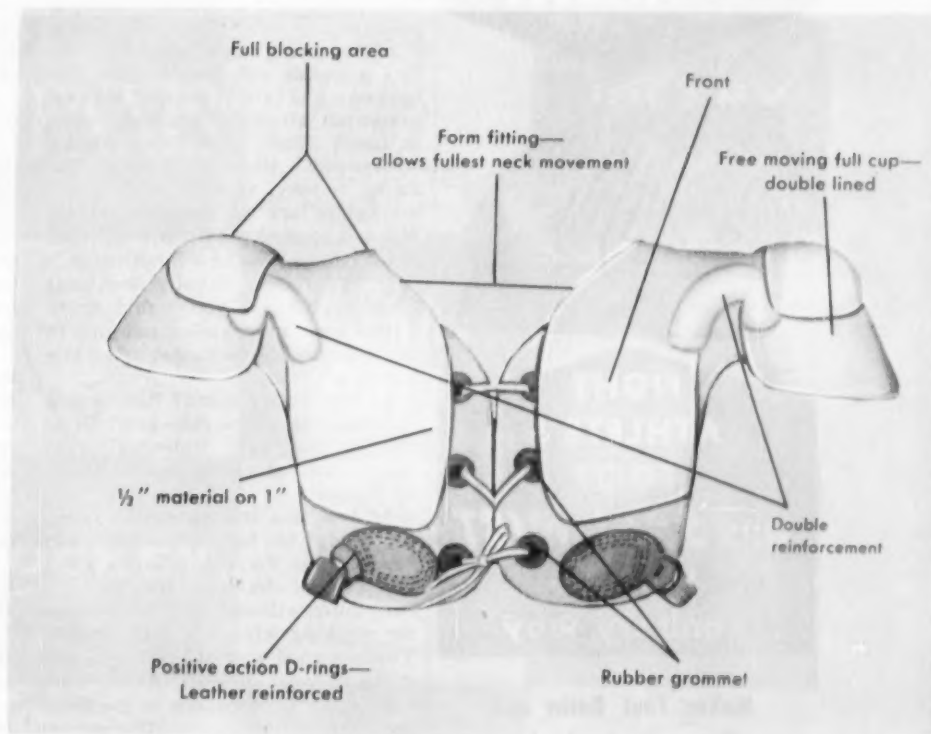
(d) *Is his volleying game weak?* If so, hit short and pull him to the net whenever you have a good opportunity. If he's tough from the baseline, he's likely to be weak at the net. Along with this trick of pulling a player to the net, learn a simple lob—one that can be reliably hit into some part of the back court.

The lob has the biggest target of any shot in tennis, 27 by 14 feet in singles, larger in doubles, and it's poison to high school players and a great many college boys. Just be sure you can drop it somewhere in the back 14 feet of the court. A good lob should force your opponent to hit his overhead from just behind the service line or farther into the back court.

Most boys can hit good overheads when standing on the service line or closer to the net. But watch them fall apart when they have to hit the same overhead from behind that service line, particularly after

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they miss one. And lobs are so easy to hit. *The biggest target in tennis!* But they do require a little practice, at least, so don't neglect them in your practice sessions.

Aren't there many dark little secrets in grips, swings, and footwork? Here, too, simplicity rules.

1. For the forehand grip, we "shake hands with the racket." This is the Eastern grip, which puts the hand and arm in a natural throwing position.

2. The swing itself closely resembles a simple side-arm throw. The backswing is rather straight back or somewhat elliptical if a full swing is used. *Avoid high, long, flashy backswings.* Make it simple. The swing is easy, smooth, with a remarkable lack of apparent effort. Make it look easy. When you make it look hard, you're over-hitting.

3. The follow-through? About shoulder high as you would finish a side-arm throw, racket pointing in the direction of the target or a little to the left of it.

4. How do we stand? How would you stand to throw side-arm? Or to bat in baseball? Sidewise! Feet apart about shoulder width. That's it! Simple.

5. And like the baseball player, be ready to bat when the ball reaches you. Too many tennis players are still shuffling lazily into an "anything-will-do" sort of position for stroking when the ball arrives. That's a good way of making tennis difficult, very difficult. As Al Carvell, Jr., of Chicago, one of the finest teaching pros in the country, puts it, "If you're in position when the ball arrives you can't miss!"

6. What is that "position" to which we refer? Almost identical to the batting position when the pitcher is ready to deliver the ball. However, the racket will usually be held somewhat lower than a bat. After stroking, we always come back to the "ready position" of tennis, player facing the net, racket extended easily in front of the body, feet apart, weight on the balls of the feet, knees bent, and alert to the direction of the opponent's shot. As soon as we know to which side the ball will come, we then swing or bounce quickly into the "ready to bat" position.

7. The volley? Simple. Block the fast ones, something like a bunt in baseball. Meet them a little farther in front of your body (toward the net) than in hitting ground strokes. If you can catch a ball, you can volley. It's fun and it's simple. If the shot coming at you is slower, punch it flat rather than using a slightly undercut block. Will you be passed cold at times? Certainly! But don't

worry unless you're losing over half the points. You need only a little over half the points to win your match.

8. The serve. If you plan to play a great deal of tournament tennis, you should learn to use the continental grip. It makes possible a much greater potential in the development of the serve. However, it's generally difficult to learn, particularly if the player has been serving with the Eastern forehand grip. So let's take your serve as it is and apply some simple principles.

(a) Begin your practice rallies with serves and you should soon learn to place them to the forehand, backhand, or straight at your opponent. Most players can hit only to the forehand, to their opponent's strong side. A soft serve to the backhand may be more effective than a blast to the forehand. And a sharply hit ball straight at your opponent may bring weak returns or errors.

(b) Players frequently make their first serve a very difficult shot for themselves by blasting away with all their strength. Then the second serve is a bloop that anyone can handle. The receiver promptly makes the situation difficult for the server by forcing sharply with his return of service.

Perhaps we can simplify the problem. Slow the first serve down until at least 60% of your attempts are in the service court. Speed up your second serve until you begin to miss around 25% of them. With such percentages you'll make very few double faults. Now, place those serves to your opponent's weakness.

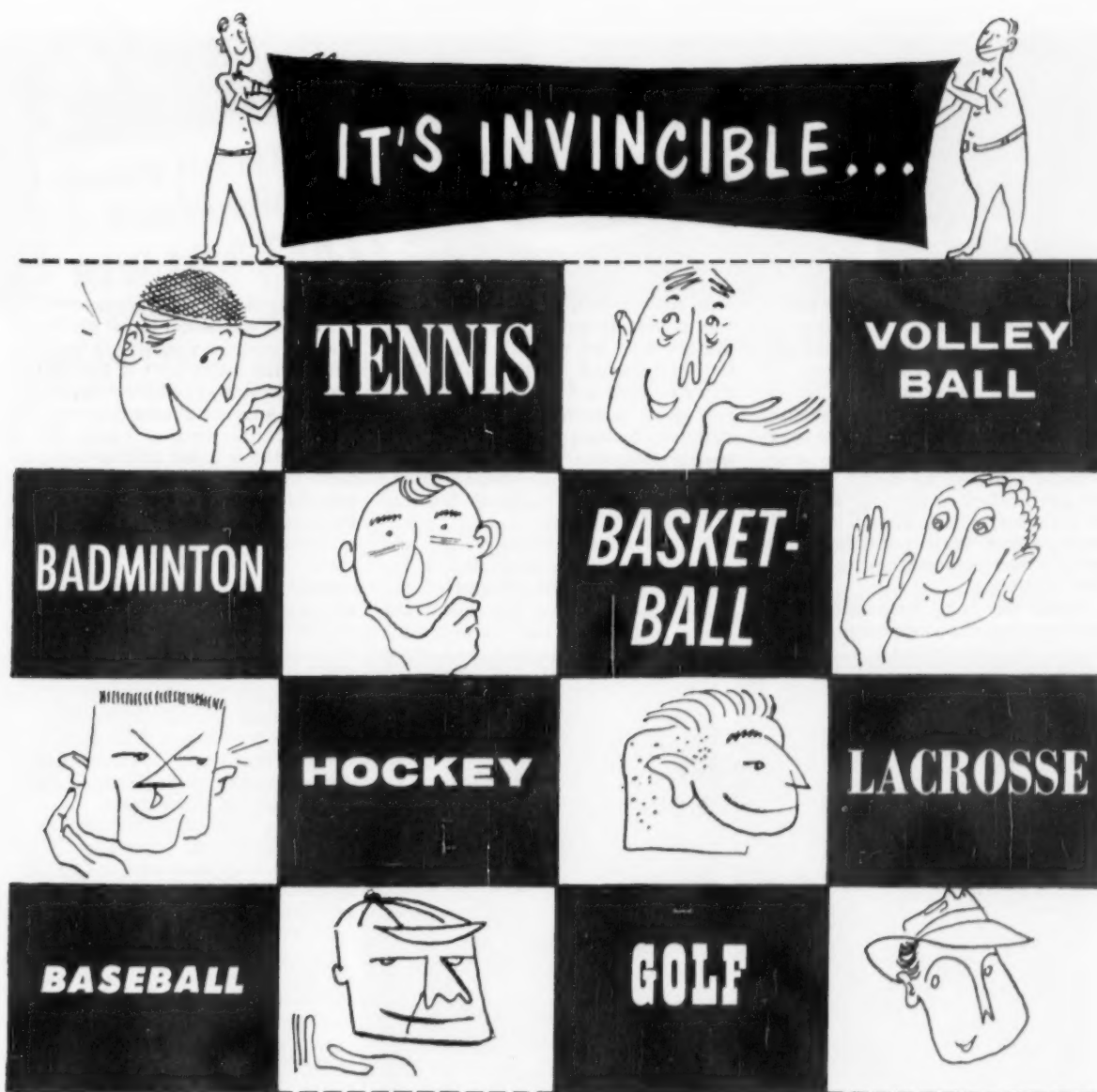
Don't expect to ace him very often. No good player expects this. But he does want to force weak returns regularly, so that he can take over with a net attack or with strong ground strokes. If you can hit your serves hard enough and often enough to make them pay, by all means do so. But a solid serve, well-placed, will usually be much more simple for you and more difficult for your opponent than the customary "blast" followed by a weak "bloop."

Finally, don't expect too much too soon in developing your game. If you do, you'll immediately make the game too difficult for you to handle.

How can you tell when you're doing this? Simple. You're having short rallies of two strokes per player or less and making too many errors in relation to placements.

Remember, a good player makes it look easy. I think the best thing that a spectator or an opponent can say about your game is "Oh, you do it so easily." You're then making tennis simple.





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# Building Better Blood

By W. W. HUESNER and R. H. POHNDORF

Southern Illinois U.

University of Illinois

**I**T'S a curious fact that many coaches, trainers, and physical educators know more about batting averages, pass completions, and shooting percentages than they do about the important physiological mechanisms of their human performers.

Some athletes, no doubt, become top performers in spite of this lack of knowledge. But others probably never attain their potential levels because such information isn't available to them.

Blood has long been one of the most mysterious components of the body. The ancients believed that the

soul of the body was contained in the blood. However, by the early Middle Ages the pendulum of popular thought had swung to the other extreme, and the practice of blood-letting or bleeding was used as a cure-all technique by barbers or barber-surgeons.<sup>1</sup> To this day, barbers still display their striped blood-letting notices on poles in front of their establishments.

The practice of blood-letting was regulated by many superstitious influences such as the phases of the moon, the day and the hour, the status of the tide, the sex and temperament of the patient, and other

such irrational circumstances.

The use of human blood for remedial purposes is also an old practice. During the latter part of the Middle Ages, blood was used by influential persons who could afford to risk the lives of the donors. Louis XI of France drank blood from several infants in a vain attempt to regain his health. It has also been reported Pope Innocent VIII drank the blood of three young boys who died soon after they were bled.<sup>2</sup>

In 1616, William Harvey, a London physician and teacher, announced one of the most important findings in all medical history. He observed that the pathways used for the circulation of blood formed a closed circuit. As a result, the circulatory system was finally recognized to be essentially a continuous lifestream. This discovery opened the doors of a new science called physiology.

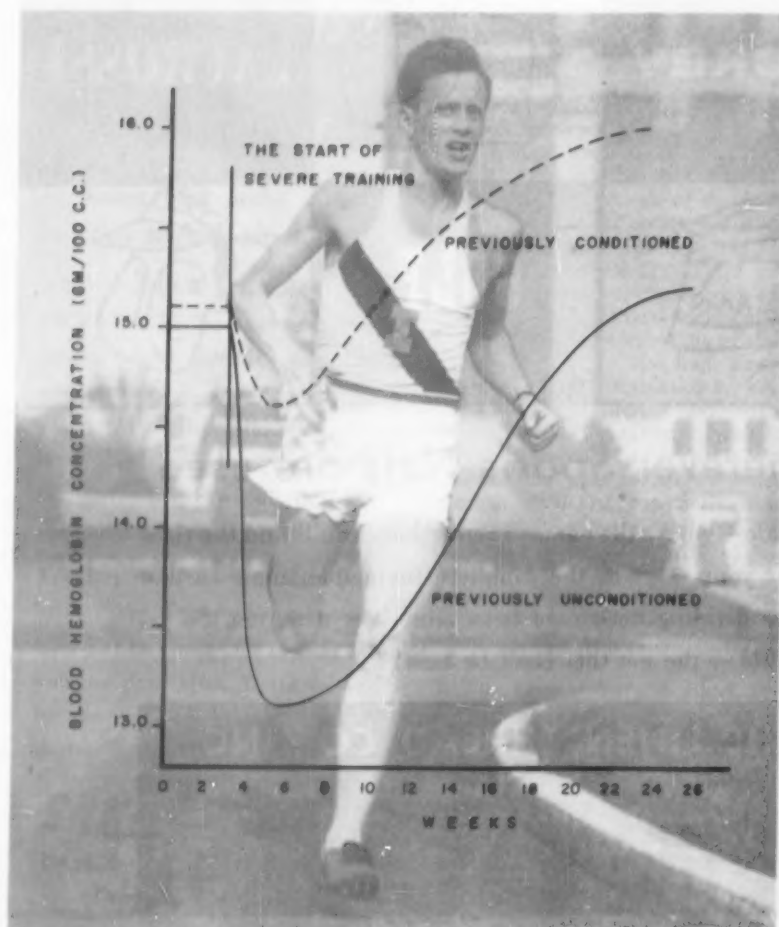
Harvey first described red blood corpuscles in 1665.<sup>3</sup> However, it was not until 1852 that Vierordt, a German doctor, described the first exact, but laborious, method of counting red blood cells.<sup>4</sup>

From these simple beginnings, the clinical techniques for blood analysis have been improved so that today many blood measures may be made in a matter of minutes. Although great advances have been made in clinical practice, coaches and physical educators remain decades behind in their application of present-day knowledge.

## FUNCTIONS OF THE BLOOD

Certain conditions are necessary for the individual cells of the body to carry on their normal activity. These conditions include an adequate supply of oxygen and food, prompt removal of waste products, and a relatively constant internal temperature, alkalinity, and water balance. The primary function of the blood and circulatory system is to satisfy these conditions, thus maintaining a nearly uniform cellular environment.

One can imagine that the circulatory system acts much like a vast transportation network of rivers (arteries and veins) and canals (capillaries) serving an industrial nation. Each factory (body organ) receives raw materials to perform its particular function, and,



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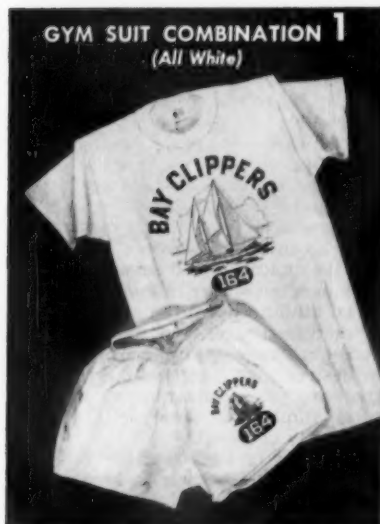
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in turn, both useful and waste products are produced and carried off. If either a lack of raw materials or an over-abundance of end products exists, production must be slowed or even halted until the bottleneck is cleared.

Much of the matter transported by the blood stream is in liquid form and is carried in the plasma. However, some of the raw materials and end products, notably oxygen and carbide dioxide, require other means of conveyance; and the red blood corpuscles may be compared to cargo barges floating along this transportation network.

There are about 300 million red corpuscles in a large drop of blood. Each red blood cell contains hemoglobin, an iron compound, which actually carries oxygen to the cells and carbon dioxide away in various chemical combinations.

In the normal subject, under usual circumstances, the blood and circulatory system are fully capable of satisfying all of the conditions necessary for cellular activity. However, during exercise the demands of the cells are greatly increased. More oxygen and food are needed, more carbon dioxide and other waste products are produced, and internal temperature, water, and acid-base balances are upset.

If the exercise becomes severe, the cellular demands may exceed the capacity of the blood stream to satisfy them. Physiological bottlenecks then occur, and the subject is soon forced to reduce his activity in order to allow recovery to take place.

### CONDITIONING THE BLOOD

Most experts agree that simple muscle strength can be trained to a high plateau of performance in a relatively short period of time by the use of a proper balance of exercise, food, and rest. This is in accord with the basic physiological law of overcompensation.<sup>5</sup>

The development of muscular endurance, however, is a complex process requiring considerable length of time. The reason for this relatively slow improvement in endurance is that it can occur only in conjunction with an increased supply of oxygen and other raw materials along with a faster removal of end products.<sup>6</sup> That is, greater endurance is mainly a matter of better circulation of blood throughout the entire body.

There are only three possible ways in which training can improve the capacity of the circulatory system to meet the increased demands of exercise. The first of these is to increase the amount of blood flowing through each capillary. The second is to increase the number of available capillaries in the active tissues of the body. Finally, the composition of the blood itself may be altered.

Numerous studies have shown that training does increase blood flow through the individual vessels. In addition, Petren and his co-workers<sup>7</sup> carried out a classic experiment which

showed that physical training may cause increases of 40 to 45% in the actual number of capillaries contained in the heart and skeletal muscles.

On the other hand, there hasn't been enough scientific evidence to prove that blood composition can be modified by training. Several investigators have studied this problem, but generally their results have been contradictory and inconclusive.<sup>8,9</sup> The writers believe, however, that most of these experiments were conducted with training programs which were not only too light, but which were terminated too quickly to show the actual existing trends. In addition, the immediate effects of exercise are so great that they may often completely mask the more subtle long range effects of training.

The average life-span of red blood corpuscles is approximately 125 days.<sup>10</sup> During their lifetime, these fragile cells are forced through the heart and arteries at great speeds and pressures; they undergo innumerable collisions with one another and with the arterial walls; and at times, they're even forced through capillaries so small that marked distortions of their shape occur. Finally, as they age, the stresses and strains to which the corpuscles are incessantly subject may become too great, causing them to break into small fragments which are then destroyed in various ways.<sup>11</sup>

To offset this destruction, there is a constant corresponding production of red blood cells by the bone marrow. It has been reliably estimated that an average of ten million red corpuscles are produced and destroyed during each second of a person's life.<sup>12</sup>

With unaccustomed severe exercise, such as often occurs in the early stages of an athletic training program, there is increased stress on the red blood cells and, consequently, a higher rate of destruction. The bone marrow then increases its production so that the total number of these cells remains relatively constant.<sup>13</sup>

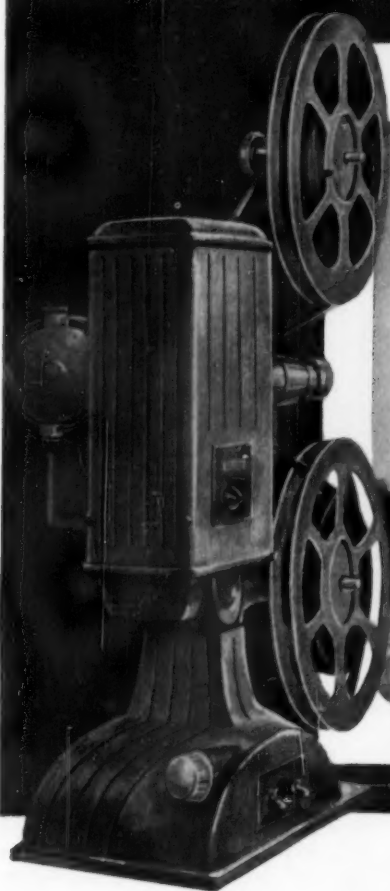
However, many of these cells are immature and deficient in hemoglobin. Thörner<sup>14</sup> established this fact by computing the average amount of hemoglobin per red blood cell in 42 Olympic athletes immediately after their competition in the 1928 Games in Amsterdam. He found significantly lower than normal values following this period of extreme stress, even in these highly trained athletes.

Since the total number of red blood corpuscles is unchanged and the hemoglobin content of the average red cell is decreased, the total capacity of the body for carrying oxygen and carbon dioxide is considerably reduced by sudden exposure to severe unaccustomed exercise.

A recent study by Andersen, Heusner, and Pohndorf<sup>15</sup> has shown that the initial decrease in hemoglobin is proportional to the intensity of the conditioning program when the subject is in an untrained state. In one person who was suddenly subjected

(Continued on page 54)





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## A Cross-Country Coaching Program

By **DANIEL H. O'GRADY**

*Coach, Danbury (Conn.) High School*

**I**N EVERY team sport from September to June, depth of material is sought by the high school coach. A large turnout brings a glint of joy to the most jaded mentor's eye. In numbers there may be strength, and cross-country is no exception. Let's say that our ultimate goal may be seven or eight long-legged antelopes with feet of leather, lungs of rubber, sinews of steel, and hearts as great as the outdoors in which they compete.

Since this type of boy isn't usually found but must be developed, we must get enough raw material to keep the fight for those top positions boiling right through the final meet of the season.

Perhaps cross-country can be sold to the principal or athletic director on the basis of being inexpensive, entailing little equipment, not competing with football in the anatomical specimen sought after, and as a preliminary conditioner for winter and spring track.

No red-blooded American boy, however, can be sold on these commonsense, matter-of-fact bases. Where's the challenge to his budding virility? Where's the romance? The appeal must be directed at his characteristic urges and drives. What specific attractions can you spotlight for potential candidates? Here are a few suggestions:

1. Announcements the first day of school inviting all boys, regardless of size, to attend a meeting. Stress that there's no body type for cross-country; that they're all starting from scratch; that they're in the toughest sport of all—no substitutions, no time-outs, no hands playing in the hills, no co-ed cheerleaders, no chance of passing the blame for poor performance onto a teammate. Each man is on his own, and can prove his ability for the world to see.

Give them a quick glimpse into the long dark past where man's first sport was foot-racing, born of the

need to outrun the beasts for survival; spot the Olympics in 1453 B.C., touch upon Pheidippides, mention the origin of the word marathon; immortalize the great trail runners who fought the Indians, tell them of Thomas Jefferson's record as a foot-racer. Cloak it with the romance it deserves, gird it with the dignity its history warrants, polish its opportunity for individual brilliance, and you can bring to cross-country the type of boy you're seeking.

2. Put these points over at the first rally. Highlight the first meet. Present your top runner to the school. At all future rallies, present medals and trophies as they are won.

3. Announce each meet on the main bulletin board and in each room, (by posters and in newspapers), and indicate course and distance. Then follow up in each of these spots with score and result, indicating which team won, for many people don't know that the low score wins in cross-country.

4. Try to start and end your races at times when students will be in that area, i.e. near the buildings, play area, and practice fields, preferably just after dismissal or between halves of football games.

5. Dress up your meets. Insist on proper uniforms, numbers, flag-



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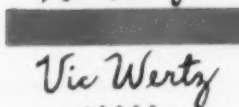
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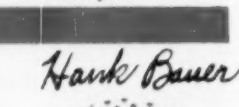
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marked course, roped chute, starting gun, and all the little bits of color, suspense and drama which are a natural part of this sport.

6. Arrange an attractive schedule; always pick 50% of your opponents because they're tough and you stand a 60-40 chance of losing to them. This is the whip which drives your squad, the spur to their pride; and don't be amazed if they win most of them.

The greatest sin in track and cross-country scheduling is the failure of strong teams to meet one another. The blame lies directly on the coach, particularly if these schools meet in all other sports. Your boys know you're ducking a potential beating, and lose respect for themselves and for their sport.

Bring one of the best teams in your state to your course, advertise their coming, build up their reputation and publish their record. Your squad will profit by the chance to run against top men and will see the goal toward which you're driving them. If strong yourself, seek out a big meet and let the boys test their mettle in the crucible of championship competition.

7. Try to arrange one trip each season as an added incentive for making the top seven spots. Never take this trip as a reward or a sop to the squad. Set standards to determine the need for it. When we had seven boys who could crack 13:30 on the LaSalle course, we knew and they knew they were good enough to warrant a chance at the larger meets in the New York area. The standard for the Danbury course is five boys under 13 minutes.

8. Run interclass meets over abbreviated courses early in the season and add the good looking prospects to the squad. Take on new men any time in the season and have a "B" schedule of weekly meets to keep them interested until their conditioning warrants moving them up.

9. Balance the classes on your squad. Word of mouth advertising and personal urging by the boys will swell your numbers. Have an intra-squad meet early and count ten men from each class. This will tend to send seniors after senior prospects, etc., and give you a backlog of returning veterans each year.

10. A good team is like a good lawn; it grows by being cut. Set rigid training rules regarding tobacco, alcohol, diet, and sleep. Build a spirit that demands top effort toward a common success, so that the boy who sneaks a smoke knows he's cheating not only himself but his teammates who expect and deserve nothing but his best performance.

We don't drop boys for the first offense, but give them additional workouts "to eliminate the effects of their dissipation" before readmitting them to regular practice. They may not compete until they're again worthy of our trust and willing to share in the all-out preparation of their running mates. However, those who won't conform, whose attitudes towards practice and training are in opposition to our ideals, and who cannot take the rigorous physical conditioning without injury should be immediately released. No boy is ever cut simply because he isn't a proficient performer. We've run 72 boys in a dual meet, including top performers, middle-distance runners building a "bottom" for track, and the usual beginners and "dubs"; but they all finish and each gives the full measure of his ability.

### CONDITIONING FOR DISTANCE RUNNING

Two general coaching patterns prevail in cross-country. The first is the "speed principle" and the second is the "control principle." Advocates of the speed method, fearing that they will fall into the rut of just plugging along, start with a ½ mile and mile run early in the training period, aiming at specific times and stressing under-distance work.

Believers in the control idea, feeling that structure must be established before function can be taught, put more emphasis upon preliminary calisthenics, early training on over-distance jogging, and judgment of pace.

This doesn't mean that any of the vital factors are left out of either system. It's merely a question of where the emphasis is put.

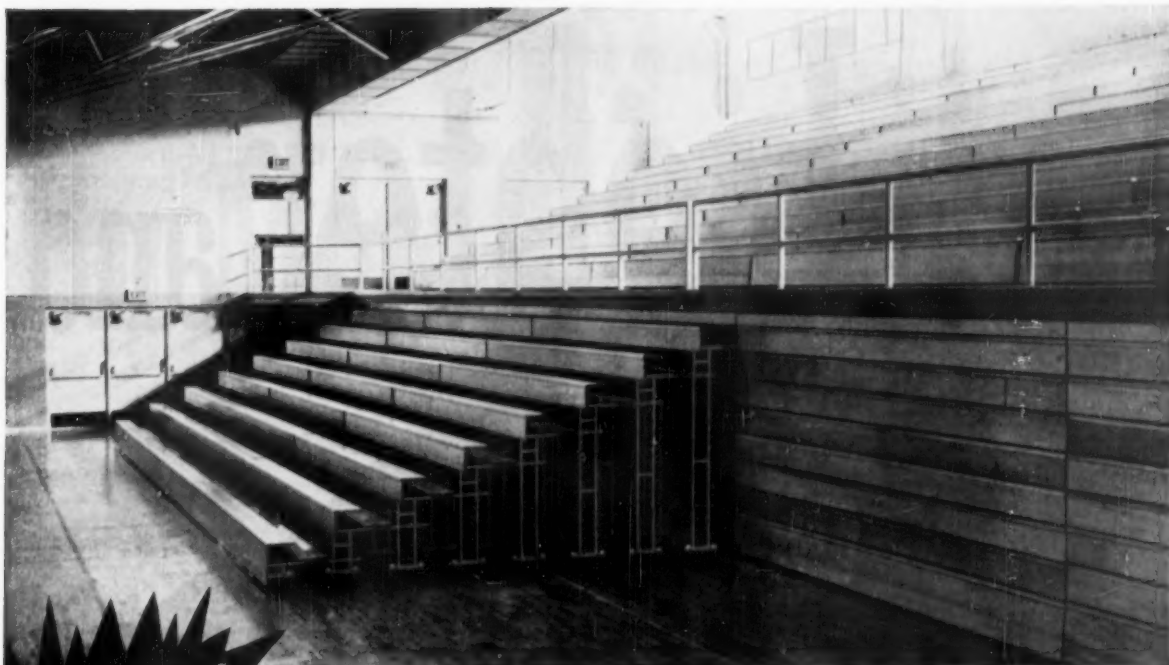
I believe that the control method is more effective on the high school level because here the necessary structure is woefully lacking. Perhaps the great danger lies in conceiving endurance as the ability to cover long distances. We insist that the boy accept the idea that endurance is the ability to carry a given speed over a given distance, and so avoid "plugging along."

### SPECIFIC AIDS TO CONDITIONING

1. Although still a much debated question in physical education circles, a definite set of planned and controlled rhythmic exercises is invaluable in conditioning specific muscle groups. We use a moving circle, adapted from the Ranger exercises, with the boys continually walking in between the exercises. After three weeks, jogging replaces

(Continued on page 72)



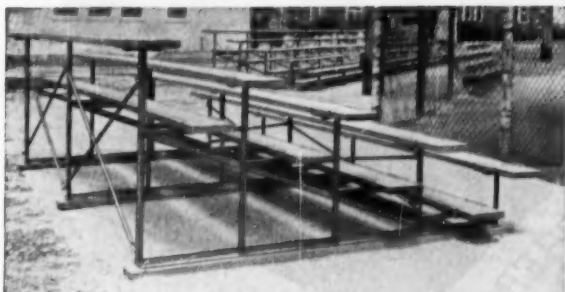


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A6010



*are available in conventional constructions.*

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# High School Rules Changes

## TRACK

**T**HE 1956 Olympics will stimulate interest in track and field. Also, the postponed President's Conference on Health and Fitness will stress this type of activity as a means of securing mass participation. In preparation for the spring meets, specialists have further perfected equipment, rules, and meet organization.

The 1956 track rules include the following new provisions:

1. In the starting position, each foot must be touching the ground (to prevent a high positioning on the starting blocks).
2. In the high jump or pole vault, a competitor may scatter his three trials over several heights. He might fail once at, say, 6', then pass until the bar is raised and make one or both of his remaining attempts at the new height or heights.
3. If a pole vaulter loses his stride and decides not to plant the pole, it won't count as a trial if he merely extends the end of the pole through the plane of the standards—so long as he doesn't touch the pole to the ground in the pit or run through the plane of the standards.
4. The rights of a shot putter or discus thrower with reference to touching the ring are slightly more liberal. Merely touching the inner edge of the ring isn't illegal, provided the competitor doesn't step on the top.

Improvement in equipment has had an influence in the constantly rising caliber of performance. A new track shoe is made of featherweight leather with heel-hugging laces of the moccasin type. Relay batons are being made more durable, decorative, and with better gripping surfaces.

Vaulting poles are greatly improved in safety, lightness, and springiness. Metal alloy and high jump bars have partially solved the problem created by splintered wood bars. Shot put and discus circles are often covered with macadam. Lightweight and easily adjustable starting blocks have been perfected. And then there are steel and aluminum spill-proof rocker hurdles.

Newly developed equipment on the market or in the experimental stage includes: a set of metal standards to hold the yarn at the finish line; metal alloy vaulting poles to give each weight group the proper spring as the vaulter reaches his release point; an experimental high school discus with a thinner edge for a better grip; an experimental implement for a revived caber toss; and hinged metal rings for shot and discus circles to facilitate handling and storing.

The attractive new edition of the Rules Book lists new national interscholastic records in the 220, 440, pole vault, high jump, mile relay, and 180-yards hurdles. All tables have been brought up to date. Individuals or schools who cannot obtain copies from their home dealers or state high school office may order direct from the National Federation at 7 South Dearborn Street, Chicago 3, Ill.

## BASEBALL

**S**CHOOLBOY baseball has experienced a healthy growth over the past 12 years, showing a whopping 100% rise in both participating schools and players. The program outlined by the Joint Baseball Committee (professional baseball officers and high school representatives) in 1944 and continued since that time has been extended for 1956.

Most of the new rules revisions are in the nature of improvements in wording or organization.

1. Each batter must wear a head protector, with the school being responsible for providing same. For the present, the umpire won't be expected to forfeit a game if such equipment isn't available, except in states which may choose to do so. But schools will be expected to make every reasonable effort to provide this necessary protection for each batter.

2. A regulation game will consist of seven innings, unless the two teams or the conference authorities agree to play nine. This rule change won't make very much difference since three-fourths or more of our high schools have been playing seven innings. But in past years, if there was a dispute about the matter, a team could insist on playing nine.

3. Added emphasis is placed on the recommendation to use the optional modified rule which permits a player to re-enter once under specified conditions. One purpose is to encourage participation by greater numbers. A coach is always hesitant about subbing for a regular if the latter won't be able to re-enter.

4. The penalty for a batting infraction, such as a batter interfering with the catcher, is slightly revised. Heretofore, if a runner was advancing home on a steal or squeeze when the batter interfered with the catcher, the runner, rather than the batter, was declared out. Under current penalty, it isn't necessary that the play be a steal or a squeeze. The penalty will apply whenever a runner is advancing home when such interference occurs.

Baseball publications include the 1956 Baseball Rules Book, Baseball Case Book, and Baseball Examination Set. The latter publication was expanded last year to include two parts: Part I, primarily for review purposes, to be taken by all umpires; and Part II, primarily for testing and promoting purposes.

A new motion picture entitled *Baseball-By-the-Code* will be made in April in St. Petersburg, Fla. Representatives from the three professional groups and from various parts of the country will join in making the picture.

State offices will also have an opportunity to obtain a print of the film, *World Series of 1955*. These prints have been purchased by the National Federation with funds provided through the efforts of the Joint Baseball Committee. State associations which have the machinery for distribution can make the film available to member schools and service clubs.



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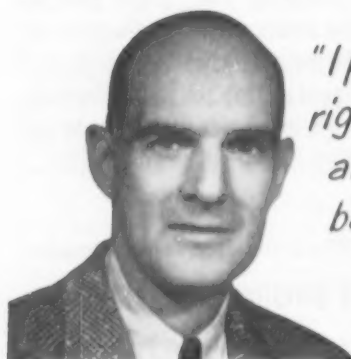
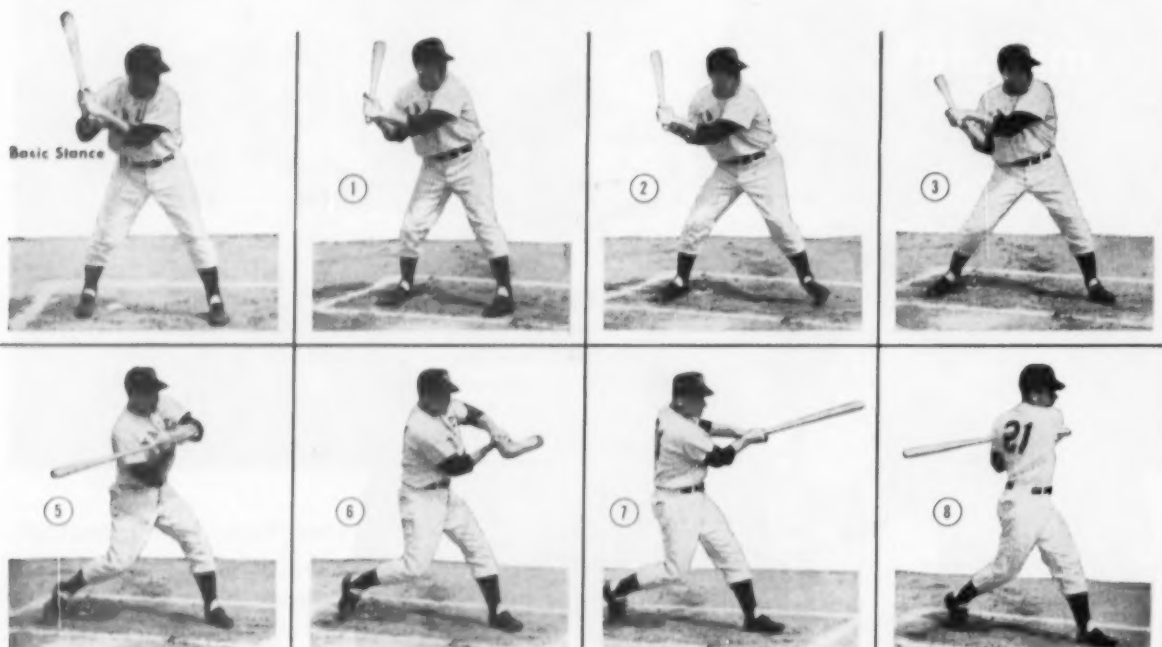
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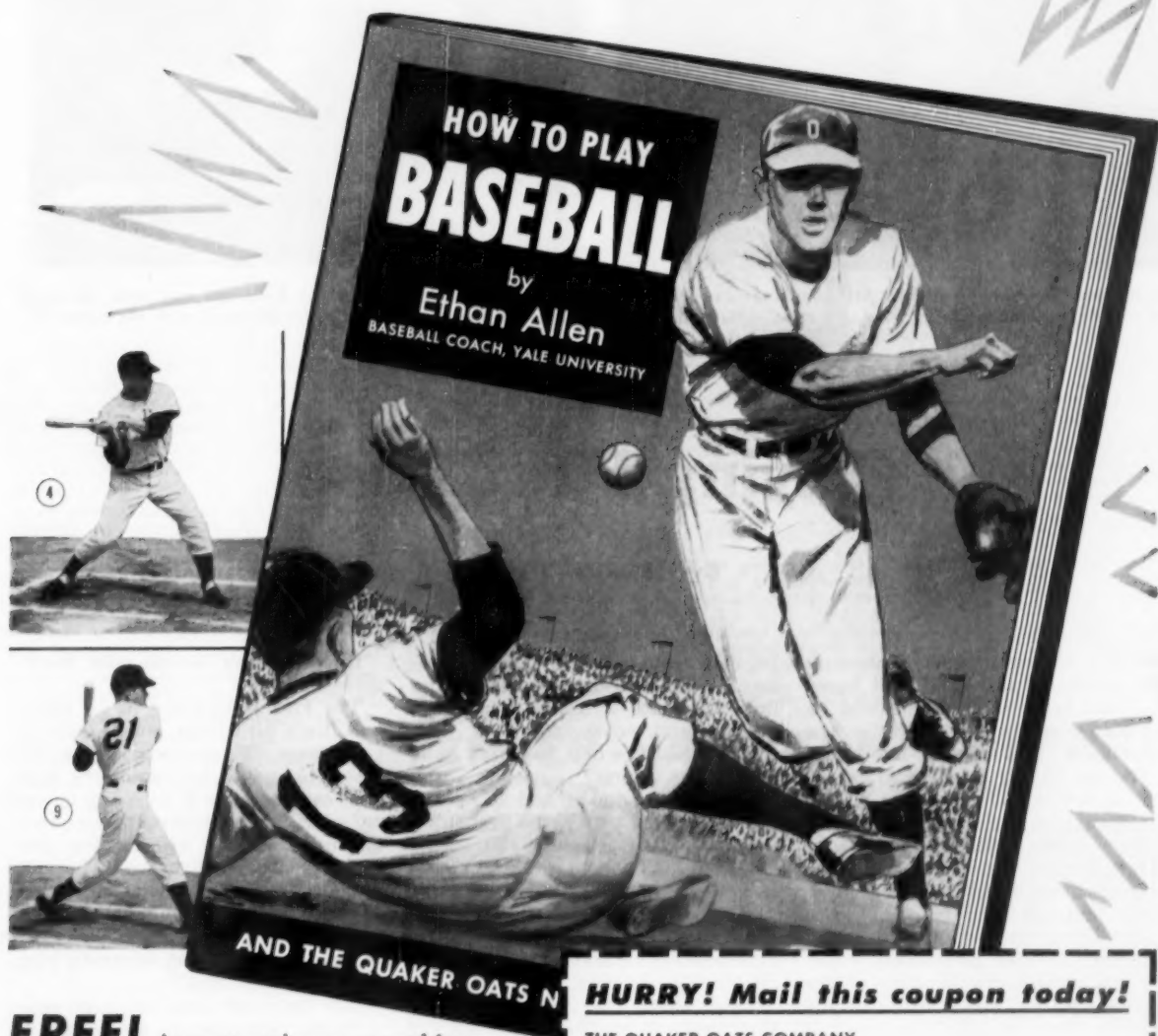


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Gil Hodges, fine fielding Dodger first baseman, demonstrates the coverage on an ordinary play. He does not straddle the



bag, as many players do. He finds the bag with his right foot and then stretches into the diamond with the other leg.

## Playing First Base

By GEORGE SISLER

**F**IRST, let's try to build a physical picture of the ideal first baseman type. How tall should he be? And does it make any difference whether he's right or left-handed?

Though ideally you'd want a tall boy at first, a short boy can do the job—provided he's agile and has a good reach. Stuffy McInnis, Joe Judge, Lu Blue, and Babe Dahlgren were all great first basemen, though small in stature.

The same thing applies to throwing arm. Though preferably you'd want a left-hander because of the plays to second and third, a right-handed thrower who's quick and nimble can do the job almost equally as well. Gil Hodges is an ideal example.

The player's attitude toward the job is vitally important. A lot of boys go over there with the idea that all there is to the position is catching the ball from the infielders.

This is an edited version of one of Red Barber's Radio Baseball Clinics over C.B.S. in which outstanding specialists divulged the fundamentals of their position.

I'd call them stationary first basemen. What you want is a *moving* first baseman—a fellow who's aggressive and moves around.

**How should a first baseman handle throws to first?**

If there's no one on and he's playing back quite a way, the first thing he should do is go over and *find the bag with his left foot*. I don't believe in going over there and straddling, a common practice. In the time it takes to straddle and kick back, the first baseman could be taking in a bit more territory in the field.

**How about the "ballet" stretch that looks so terrific?**

That's important only once in a while. If a play is very close, the first baseman is supposed to catch the ball as far out in front as possible to save time. Some men will allow their heel to be the last part of the body to touch the bag. That's wrong. The toe should be the last part that touches the bag. That way you can stretch a bit farther. The exaggerated ballet stretch is neither necessary nor desirable if the play isn't close.

**How do you handle the hard-driven ball?**

The idea is to come in on every ball that's hit to you, not be back on your heels. When you come in, it's easier to judge the hop of the ball. You can then get it on a big bound or on a short pick-up. Of course, at times the ball will come at you like a rocket and you won't be able to charge it. In that case, you'll have to make the play from your set position.

**How does the first baseman play with a man on first?**

The baseman assumes a position with his right foot at the corner of the bag toward the pitcher and his left foot just a medium stride away. He faces the pitcher in ideal position to cover the bag on a pick-off throw. He need merely drop the glove in front of the base and let the runner slide into it. The moment the pitcher delivers the ball, the first baseman should take two steps toward second and face the batter.

**What are the first baseman's duties on a sacrifice bunt?**

(Concluded on page 75)



## Techniques of Discus Throwing

(Continued from page 14)

ing position. Notice how Iness's entire body weight pulls the discus through this position. Notice his head position, his left and his right arm. Everything is perfect. From the time his left foot lands, at the front of the circle, until he releases the discus, Iness will have pulled the discus through almost 300°.

To throw a discus effectively, you too must hit this same position regardless of the individual style you use during the turn. How you get to a good throwing position is somewhat immaterial as long as you hit it moving with your maximum speed.

To do this, however, you must be able to execute the simple sequences described three paragraphs earlier. Once you can hit this position and continue to the position Iness is in, the distance you can throw will depend largely on how fast you can move the discus through the finish.

Look also at the excellent sequence on Consolini's finish (pictures 9-11).

1. Notice how his entire body pulls the discus through the finish. Too many throwers merely pull the discus with their arm alone when they hit the position shown in picture 9, and never bring their far stronger and more powerful torsos into the action. During the finish, keep your right arm and shoulders as relaxed as possible. Let your arm act as a whip with the main power coming from your body.

Much of this power can come from the "differential" mentioned before; that is, a position where your legs and hips arrive in a throwing position well before your upper body, shoulders, right arm and discus.

2. Notice how his left leg contributes to the power he unleashes during the finish. Too many throwers block the action of the finish by straightening their left leg too soon or by actually bracing against the momentum they have developed up to the throwing position.

In picture 9, Consolini has let his own momentum carry him over his left leg before driving from it. If he had straightened it at the instant this picture was taken he would have fallen back on his right leg like so many other throwers do. Instead he straightens his left leg as his body weight passes over it, so that only by the time he releases the discus, is it fully extended.

The action of the left leg is extremely important. Some throwers erroneously believe that they should drive only from their right leg during the finish. Wrong! Your left leg must exert the main driving power during the finish. Your right leg should help you continue to spin into a strong throwing position as well as help you

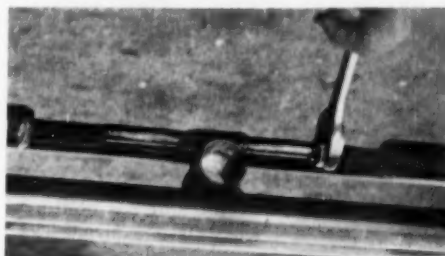
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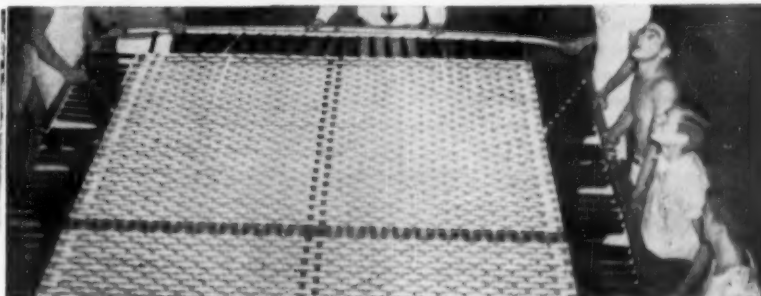
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move your body weight over your left leg.

3. Notice how his entire body moves in the same direction as the discus is thrown. Too many throwers fall to their left, away from the discus, at the finish. This can be caused by:

(a.) Putting your left foot down too far to the left, "in the bucket." All this means is that you have put your left foot down too late. Notice how Consolini's left foot alighted quickly in picture 9, about nine inches to the left of a diameter drawn through the circle pointing exactly in the direction of the throw. Your left foot must do the same.

(b.) Turning your head too far to the left at the finish. Notice Iness's and Consolini's head positions during the finish. Do likewise, please.

4. Notice his left side is somewhat like a gatepost around which his entire body swings during the finish. Too many throwers let their left foot leave the ground too early during the finish, with the result that they lose power. During the finish, you must exert as much force for as long a period of time on the discus as possible. Think of a "long pull" . . . and the longer the better.

If you reverse your left foot just an instant after picture 9 was taken, but before you release the discus, you will exert far less force on the discus than by whipping it away around your leg like Consolini does. The final pull of the discus must start early (as soon as your left foot lands).

Also, you can exert a force on the discus only as long as at least one foot is on the ground. If you reverse too early, much of the rotational or forward momentum developed to that point will be dissipated. (Whenever you reverse as you throw, your body will move in the opposite direction of the throw.) Your entire body must move forward during the release.

### SUMMING UP

1. If a turn doesn't add at least 20% to your standing performance, something is fundamentally wrong with your turn.

2. The faster the discus is moving when released, the farther it will go. Therefore, one of the main purposes of the turn is to build up as much speed and momentum as possible. To do this, your movements must be simple and direct. Avoid superfluous motions which do not make you go faster.

3. Another purpose of the turn is to bring you into the strongest throwing position possible with as much speed and momentum as you can muster.

4. Speed alone won't make the discus go far. You need a fast, efficient turn plus a strong, explosive finish. The success of the finish depends largely on the "differential" you can create between your lower body and the discus as you enter the throwing position. The key here is how far

back you can keep the discus when your left foot lands (picture 8). Theoretically, your eyes should be facing directly back, in an opposite direction to the throw, the instant your left foot lands. You can exert a long pull on the discus only from this position.

5. The entire throw must be an accelerated motion from start to finish. Your start should be fast, but your finish must be *much faster*. There can be no pauses, especially just before the finish. Visualize the entire throw as *one motion*.

6. During the turn and the finish, you must remain relatively relaxed. Do not fight the discus with your arm at the finish. It should act only as a whip. To do this, it must be relaxed. Your main throwing power must come from your entire torso and the lift of your left leg at the finish.

**For Further Information:** I have omitted some of the essential details which make up a good discus throw, as all of this has been more adequately covered in Ken Doherty's outstanding text, *Modern Track and Field Athletics* (\$7.35), Prentice Hall, 1953. If you're seriously interested in discus throwing, Mr. Doherty's text is a must.

There are other good references. Cromwell and Wesson's *Championship Technique in Track and Field* (\$5.50), McGraw-Hill, 1948, has an excellent action sequence of Ken Carpenter (174' 1 13/16", 1936) which shows basically the same style used by Consolini without a reverse.

*Field Techniques Illustrated* (\$1.75), Canham and Micoeau, Barnes & Co., 1952, has some excellent drawings of Fitch (180' 2 3/4", 1946) and Gordien (194' 6", 1953) which help show the rhythm and motion involved in discus throwing. Personally, I believe the styles shown are too complicated for a beginner, and Mr. Canham unnecessarily slights the use of a good "pivot" turn.

*The Discus Throw—Instructional Booklet* (75¢), Chapman, Amateur Athletic Association, London—presents a good sequence of Consolini. In the text, Chapman differentiates between the "jump style" of Gordien and the more orthodox "pivot style" of Consolini.

The best action sequence of Gordien can be found in an inexpensive Swedish booklet called *"The Hammer and Discus,"* by Holmér available from AB Lindqvist Förlag, Stockholm, Sweden. Holmér has also included some excellent action shots of Andersson (171' 11 3/4", 1934) showing a flawless pivot style turn.

Ryan and Werner's *Track and Field* (\$3.50), U.S. Naval Institute, Annapolis, Md., 1950, has a good action sequence of Vic Frank (177' 11 1/4", 1949) showing one of the most perfected forms utilizing as much speed as one can generate through an orthodox pivot style turn.

All of these books may be purchased directly through SportShelf, 10 Overlook Terrace, New York 33, N.Y.

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# COACHES' CORNER



Please send all contributions to this column to Scholastic Coach, Coaches' Corner Dept., 33 West 42 St., New York 36, N. Y.

**F**IVE-YEAR-OLD Jimmy had been taught that Sunday is not a day for play, and his mother was horrified one Sunday morning to find him practicing pivot shots on the basket in the back yard.

"Jimmy," she scolded, "don't you know it's wicked to play ball on Sundays?"

"Oh, that's all right, mother," he replied calmly. "This isn't pleasure. I'm practicing shooting against Bill Russell!"

*Upon arriving in Florida* for spring training, the club discovered that the new players' quarters hadn't been completed as yet. So, for a time, the team was compelled to move into a dormitory in a small nearby women's college. Naturally the players were strictly forbidden to visit the girls' section.

One day, however, a fresh young shortstop was caught in no-man's land. The manager took him into his office. "Pete," he said, "this first offense will cost you \$5, the next \$10, and so on until the fine reaches \$100."

The rookie pondered a moment, then answered, "Pardon me, Skip, but what does a season ticket cost?"

**Leo Durocher**, deposed manager of the Giants, can rattle off a speech at the drop of a bat. Once asked if he would make a speech to a large gathering, he replied: "Mister, I'd suffer if I didn't."

*The cocky rookie halfback* had the temerity to try to buck the ball over the hole being protected by Bronko Nagurski. He crashed into the Chicago Bear monster head on—with disastrous results. He rose into the air, turned over, and hit the ground—out cold.

The trainer and a couple of teammates put him on stretcher and

started for the clubhouse. Regaining consciousness, the rookie felt the swaying motion of the stretcher. He cautiously lowered his hand over the side and found only space.

"God," he moaned in horror, "I ain't hit the ground yet!"

*Asked for the secret* of his success, which has brought the Yankees six pennants and five World Series crowns in seven years, Casey Stengel winked at his audience.

"Managing ability," he said, "is the art of getting credit for all the home runs that somebody else hits."

*After the hop* left his fast ball, Lefty Gomez found himself managing the Yankee farm team at Binghamton. The club was made up mostly of callow youngsters, and Lefty never could be specific enough in his instructions.

The stopper came in Binghamton's first crucial series. It was the bottom half of the seventh, men on first and second, and none out. Lefty, coaching at third, signalled for a conference with the batter.

"Look, kid," he said. "I want you to lay a bunt down the third base line."

The kid returned to the batter's box and laid down a bunt. Alas, it was just a bit too hard. The pitcher grabbed it quickly and threw to third for the force play. Then, to everybody's astonishment, the third baseman relayed the ball to first. It was a double play. It seemed that the bunter, after meeting the ball, had stayed right there at the plate!

Gomez charged for the kid. "What's the matter with you, you idiot!" he roared.

The boy's face assumed an injured expression. "You told me to bunt, skipper," he said in a hurt tone, "but you didn't tell me to run."

**Buddy Hassett**, the old Yankee first baseman, swears it happened to him while playing center field in the mi-

nors. The field, after a rainy spring and summer, was in horrible shape with the outfield grass as high as an elephant's eye.

The batter caught hold of a fast ball and sent it 500 feet into deepest center. The ball bounced way over Hassett's head, and disappeared in the high grass in deepest center. Buddy ran back and began frantically groping for the ball. But he just couldn't locate the "apple." Finally, his hand encountered something soft and furry. He looked down. It was a rabbit.

With the runner now on his way to third, Hassett hadn't any more time to continue his search. He picked up the rabbit and threw it on a line 400 feet to third base.

His arm was so powerful and his throw so accurate that he got his man by a hare!

*Watching the huge crowd* flow in for the final game of the 1955 World Series, Frank Slocum of Commissioner Ford Frick's office, turned to Comedian Phil Silvers and moaned:

"Can you imagine closing a hit show which has been sold out for every performance!"

**Al Schacht's** biggest nightmare? "I was pitching for Washington one day. The bases were full, none out, and Cobb, Heilman, and Veach coming up next. Well, Cobb was in a bit of a slump and hitting only .412. Heilman was batting his usual .365, and Veach was humming along at a modest .364. And there I was, with the wind behind the batters, three short outfielders, in the first year of the lively ball." At this point, Al will pause.

"Well, what happened?" someone will invariably ask.

"What do you think?" Al will snap. "Next day I was in the restaurant business."

**Most ballplayers** are extremely superstitious and agree that an empty barrel is an omen of victory. John McGraw, the fabulous manager of the old N. Y. Giants, was particularly addicted to this superstition.

Entering a crucial series with the Cubs, the Giants were beset with injuries. To compound the disaster, they were in the middle of a bad slump. To everybody's amazement, McGraw came into the locker room with a big grin on his face.

"Our worries are over, boys," he chortled. "I just saw a truckload of empty barrels."

That afternoon the Giants slaughtered four Cub pitchers. Next day the second baseman announced that he had seen some barrels. Again the Giants pounded the Cubs. The third day it was the right fielder who declared he saw some barrels. And on the fourth day, the shortstop came in with the same story. The Giants swept the four games.

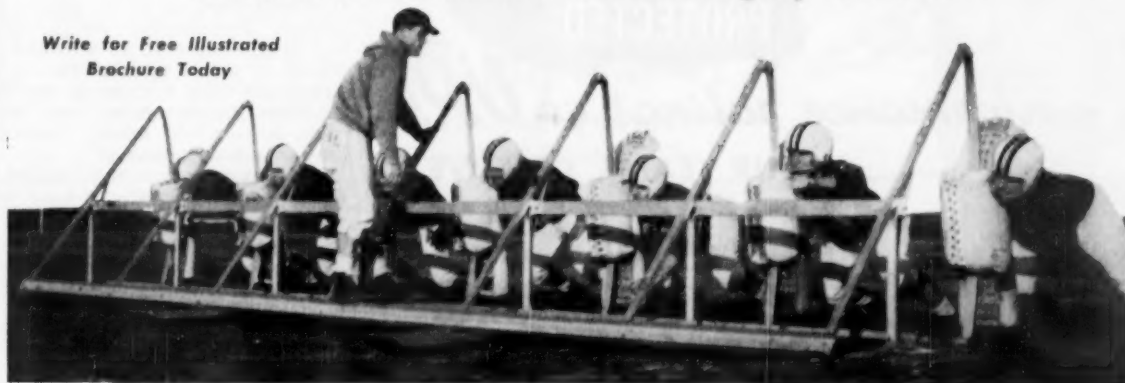
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under the showers, a big stranger came into the clubhouse. "Where's McGraw?" he demanded. "I've been driving my brewery truck past here for four days, and I want the dough he promised me."

Conducting a tryout session at Van Cortlandt Park up in the Bronx, Joe LaBate, Philadelphia Phillie scout, was puzzled by a youth who had declared he was a pitcher. The fellow just didn't have a thing on the ball.

LaBate finally called him over. "Say, Johnny," he asked, "how long have you been pitching?"

The youngster, weariness etched on his face, stammered, "A-a-all day, sir."

"Mr. Pawnbroker," said the customer, "This is my talking dog. I'll sell him to you for five bucks."

"Go way with that talking dog nonsense," growled the pawnbroker.

The dog looked up with tears in his eyes. "Please buy me," he pleaded. "This guy has been cruel to me—me, the greatest athletic dog in America. Why, I beat Dillard in the hurdles. I outscored Mikan in the 1943 NCAA. I beat Willie Mays in a home run hitting contest."

"Wow!" cried the pawnbroker. "He really talks! What a miracle! Why sell a dog like that for five bucks?"

"Because," replied the customer, "I'm sick and tired of his lying!"

**Defensing the Steal**

(Continued from page 11)

to a rundown play involving the runner on third.

**Leftfielder:** He backs up the third baseman.

**Centerfielder:** He backs up the play at second.

**Rightfielder:** He backs up the first baseman.

**OPTION #2**

If the defense decides to concede the steal of second because the runner on third represents the winning run, the pitcher cut-off play may be used. The catcher goes through the motions of throwing the ball to second, but doesn't throw it quite as hard or high. The ball goes about shoulder high to the pitcher, who catches it.

If the runner on third breaks for home, the pitcher returns the ball to the catcher. If the runner is trapped off third, the pitcher runs at him, chases him back toward third, and throws to the third baseman for the putout.

Some coaches dislike this play, considering it rather "bush." However, it's better to attempt it than to automatically give the runner

second base. What's more, it works, particularly if the runner on third is over-anxious and likes to run.

In order to steal home, the runner must be fast. But no matter how fast he is, he cannot hope to wait until the ball has passed the pitcher and then run. He cannot beat a ball that travels from the pitcher's rubber back to home plate, unless he has a tremendous lead. If he has such a lead, the catcher should throw the ball directly to the third baseman.

If the play doesn't work, nothing has been lost, as the defense has conceded second base anyway.

All of the other defensive players, except the pitcher and catcher, may follow the assignments of Option #1—although the player covering second may go directly to the bag. It's advisable for the defense to know what option is being exercised.

### OPTION #3

This is another play which concedes the back runner second base in an attempt to lure the front runner into committing himself. The catcher makes his usual throwing motion to second base. He takes one step in that direction and makes a complete throwing motion with follow through, but he keeps the ball. He then whirls toward third and throws to the third baseman to catch the runner who has broken for home.

If the runner has so committed himself that he's almost halfway between third and the plate, the catcher runs him back to the bag and throws to the third baseman for the tag.

On this fake throw to second, it's not necessary for the catcher to look at the runner at third before making his throwing motion. Since he's keeping the ball, it doesn't make any difference how large a lead the runner has.

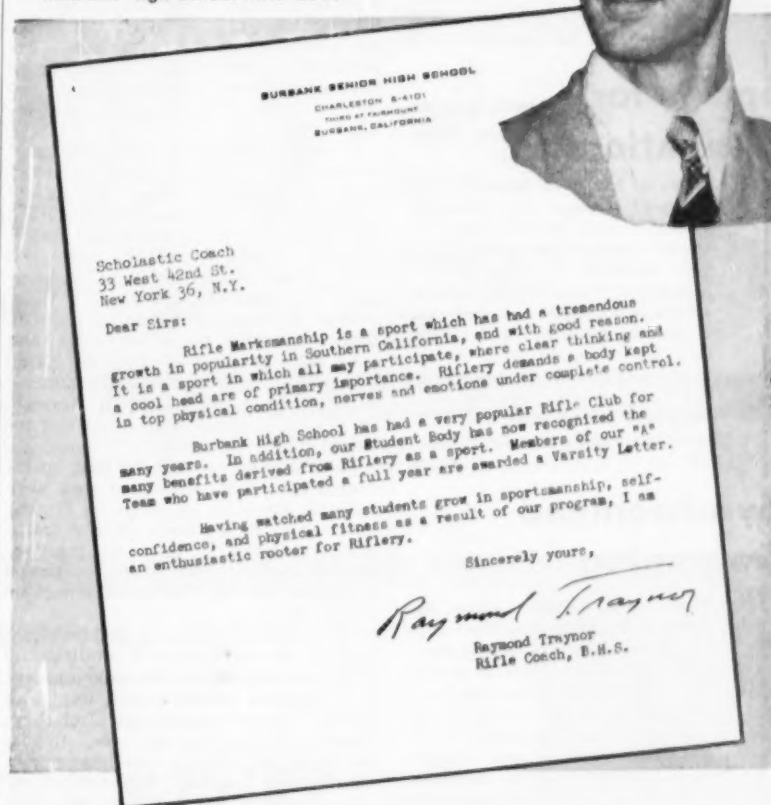
All other defensive players follow the assignments listed in Option #1, but again they should be aware of the play (though it's not necessary to signal the outfielders).

The catcher doesn't call for a pitch-out on any of these plays as the batter will either let the ball go or deliberately miss it to help the runners. In either case, he doesn't hit the ball if the steal is on.

The second and third options concede the back runner second base in an attempt to make the runner at third commit himself. If the attempt is unsuccessful, the offense now has runners at second and third. The defense must consider this risk before deciding on what option to use.

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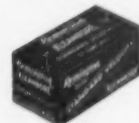
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## Building Better Blood

(Continued from page 34)

to very rigorous training, this drop was so great as to be diagnosed as a pathological anemia.<sup>14</sup>

However, it was observed that over a period of four to six months of continuous training, the hemoglobin values gradually rose to even above the pretraining levels. In short, blood hemoglobin concentration can be improved by progressive physical training.

It should be noted that individual performances may be good and even show improvement while the hemoglobin level is relatively low. Such performances can be explained by increased muscle strength, improved skill, better psychological adjustment, and other similar factors.

That is, blood deficiencies may be disguised to the casual observer, and even the expert coach may be lulled into a false feeling of complacency. Without such deficiencies, though, there's little doubt that performances would be much better.

Most coaches recognize that sprint events are often performed well very early in the training program. On the other hand, at the same state of training, endurance is poor so that repeated sprints and other sustained performances fall far below desirable standards.

This is a reflection of the fact that some of the physiological conditioning processes lag behind the development of muscular strength and explosive power. Later in the season, after these other physiological variables, such as the blood hemoglobin level, have been conditioned properly, the athlete usually is able to repeat his performance several times with good consistency. The attainment of this level of endurance, no doubt, partly reflects improved blood condition.

petition with insufficient preparation invariably results.

Many coaches advocate manual construction jobs during the summer months to keep their squad members fit. While this may be sufficient for the maintenance of muscular strength and power, additional endurance activities are required to sustain reasonable levels of blood condition.

Unfortunately, many school administrators demand excellent performances from their teams and yet forbid any type of preseason communication between the coach and his athletes with regard to training techniques. In addition, state laws and league rules prescribe specific starting dates for practice in many sports.

For example, the high school football coach generally is allowed about ten days to get his team into competitive condition. This obviously isn't enough preparation for a sport requiring a high level of endurance. In a few areas, as much as four weeks of preparation are permitted. This is a healthier situation, but still isn't adequate. Furthermore, such inconsistent regulations can lead to unfair advantages in contests between teams in different leagues.

As a result, coaches often evade the rules by having their squads attend "summer camps," participate in organized "playground" programs, or take part in other such devious training activities.

Fall sports almost require this sort of a substitute program. Coaches of winter and spring sports are able to circumvent the rules somewhat more easily, in that their squad members are in school and are accessible for early conditioning procedures. Something obviously is wrong whenever

### MAINTAINING BLOOD CONDITION

Statistics show that more injuries occur in the second halves of football games than in the first halves.<sup>17</sup> In addition, there is a similarly disproportionate number of injuries during the early weeks of competition.<sup>18</sup> Undue fatigue resulting from low levels of endurance probably is a contributing factor.

Since the quality of the blood is an important element in endurance activities, coaches either should provide sufficient formal preseason training time for this vital conditioning to take place, or they should require their athletes to maintain at least a moderate level of physical fitness throughout the offseason. When training is limited to the sport season itself, com-

**T**HIS remarkable treatise on the relationship between athletic performance and blood is the result of a nine-month research study of many subjects under varying conditions. Both authors, being former coaches, are acquainted with the many problems confronting coaches and have thus been able to keep their paper practical and understandable—yet scientific. They've elected to have it appear in *Scholastic Coach* because "it would reach more of the younger men in the field of teaching and coaching."



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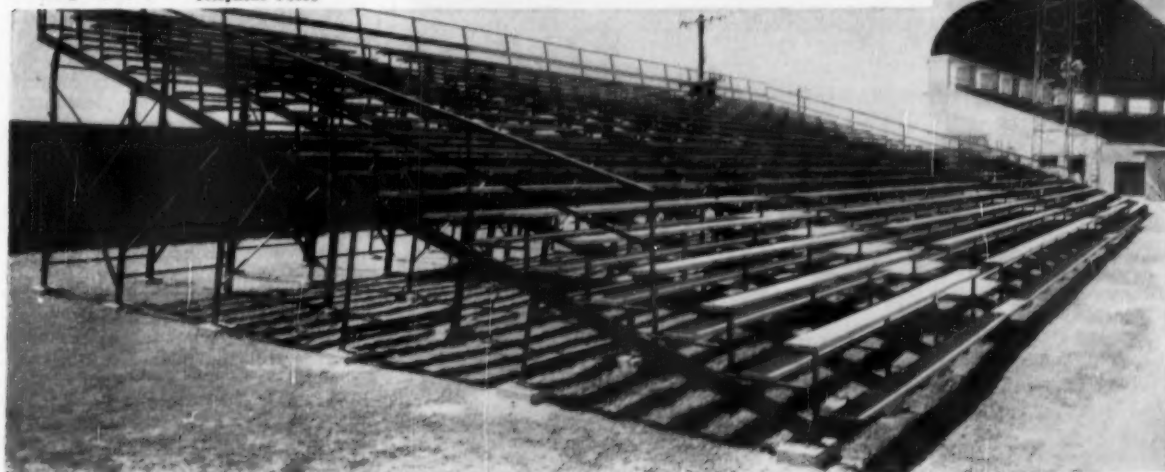
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coaches who have the best health interests of their athletes in mind feel that they cannot abide by the regulations to which they are committed.

There are no short cuts or magic formulas for getting into condition quickly. It takes a great deal of time and work. However, mental fatigue may result from doing the same activity day in and day out over long periods of time. This type of boredom is detrimental and unnecessary.

For example, track men out of season can play tennis or basketball, swimmers can do rhythmic body-building exercises and much running, football players can wrestle or participate in basketball and track, and, in general, athletes in every sport can benefit from a variety of associated activities.

Another factor in the maintenance of blood condition in athletes is the frequency of their competition. The competitive situation appears to be much more taxing than a comparable amount of work done without such accompanying emotional stress.

This was partially demonstrated by Thörner's study,<sup>19</sup> in that even highly trained Olympic athletes had significantly lower than normal hemoglobin values following their intensive competition. Sufficient time should be allowed between contests for adequate recovery. Further investigation of this matter is warranted.

#### BLOOD DONORS

An untrained adult at the start of a group physical fitness program ran for 2:03 minutes on a motor-driven treadmill at 7 m.p.h. up an 8.6% grade. After five months of moderately hard training, he ran on the treadmill for only 1:30 minutes.

This decrease in time wasn't understandable since all of the other subjects in the training program improved by two minutes or more. Upon questioning the subject, it was learned that he had given a pint of blood for a transfusion five days prior to his second treadmill run, which may have accounted for his poor performance.

Barer and Fowler<sup>20</sup> in experiments on 35 donors showed that after the removal of a pint of blood it normally takes a subject about 57 days for the hemoglobin to return to its original level. Even with a supplementary treatment of prescribed iron salts, blood donors required an average of 32.5 days to return to their previous hemoglobin levels.

Occasionally, athletes have been known to provide blood as professional donors. Karpovich and Millman<sup>21</sup> at Springfield College investigated the problem and found this practice to be detrimental to endurance performances, even to the point of utter collapse during competition. In sprinters and short distance swimmers, Karpovich observed slightly less detrimental effects. This, no doubt, was due to the fact that these short explosive events depend mainly upon

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tolerating an oxygen debt, not upon needing an immediate oxygen supply.

#### RECOMMENDATIONS

1. Coaches either should provide sufficient formal pre-season training time for blood conditioning to take place, or they should require their athletes to maintain at least a moderate level of physical fitness throughout the off-season.

2. Starting dates for practice in all competitive sports should be standardized on a nation-wide basis. In addition, feasible and legitimate methods should be provided for a coach to direct his athletes in carrying out pre-season conditioning activities (not in the skills of the sport involved).

3. Coaches should make use of a wide variety of interesting activities in pre-season conditioning.

4. Sufficient time should be allowed between athletic contests for adequate recovery. Further investigations in this area are desirable.

5. Athletes shouldn't serve as blood donors except in emergency situations.

6. Coaches should watch their athletes for signs of secondary anemia, especially when they fail to respond to continued practice. Any such suspicious signs should be referred to a physician for diagnosis.

#### FOOTNOTES

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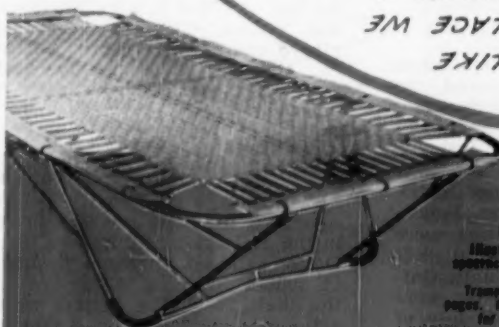
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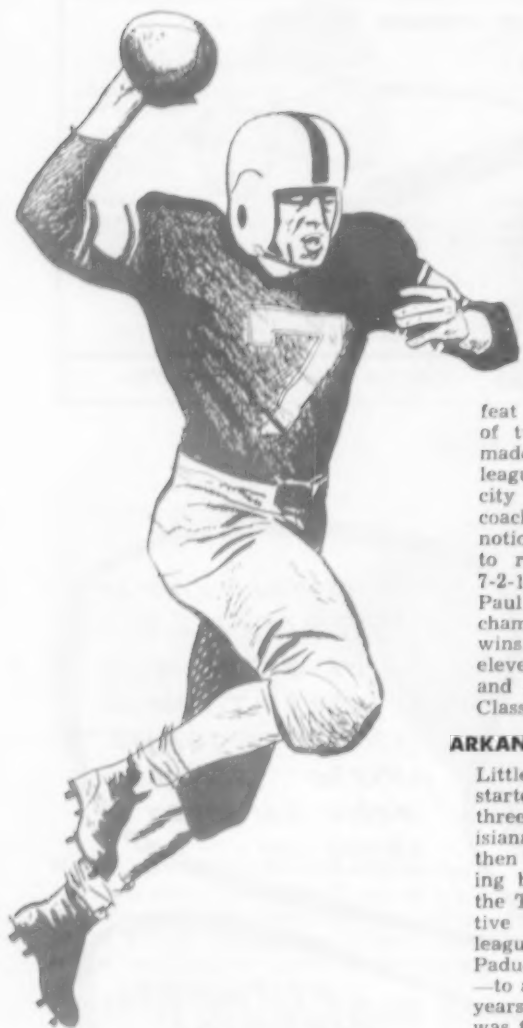
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# State High School Football

feat by little South Mountain, one of two new schools in the city, made its record only 2-1-1 in city league play. West Phoenix was the city champ. South Mountain, coached by Shanty Hogan, served notice that it will soon be a power to reckon with by compiling a 7-2-1 record. Miami, coached by Paul Petty, was acclaimed Class A champ by virtue of 10 straight wins. Elmo Roundy's Snowflake eleven was unbeaten and untied and staked the strongest claim to Class B honors.

## ARKANSAS

Little Rock's perennial champions started the season dismally with three straight losses to Texas, Louisiana and Tennessee schools. But then Wilson Matthews' great coaching began to show dividends and the Tigers ran through 9 consecutive opponents—six Class AAA league foes plus Memphis Central, Paducah, Ky., and Bessemer, Ala.—to annex their ninth crown in ten years. Batesville, a Class A team, was tied in its last game to mar a perfect record, while Warren in Class A and Lakeside of Hot Springs in Class B were unbeaten and untied. Class A Nashville played one tie in 11 games. Subiaco, Malvern, Forrest City, and Smackover won district Class AA honors.

## CALIFORNIA

In the south, the region outside Los Angeles, a champion is determined from among the 80 schools in the 12 large-school leagues. San Diego, galloped unbeaten through 12 games, tripping Alhambra in the finals, 26-14. The champs were actually tied, 20-20, by Anaheim in the semis, but won on first downs. Among smaller schools in the region, Brawley, located near the Mexican border, won the title in its area, and San Marino, a new school, won the crown in an area which reached up the coast as far as Paso Robles. In the Northern area, league titlists included Oroville of the Sierra Foothill League, with 8 wins and no defeats or ties, and Modesto of the Sac-Joaquin League. Vallejo, San Francisco

Poly, and San Jose Lincoln also had fine records. Undeclared teams were turned out at Orland, Fort Bragg, Trinity, and St. Helena, all in smaller competition. In the San Joaquin Valley Region, Bakersfield regained the large schools crown by defeating Madera in a playoff.

## COLORADO

Now working on a 16-game winning streak, Longmont, coached by Gil Everly, scored 106 points in three playoff games to win the Class AA title for the second year. In the finals, Longmont trounced a game Grand Junction crew, 32-6, though outweighed 14 lbs. per man on the line. Lamar (coached by Joe Prater) pounded Louisville, 25-0, in the Class A finals; Holly (coached by Ernie Smith) annexed the Class B crown with a 39-6 victory over Palisade; and Pueblo Catholic won the state Parochial title by defeating Denver Regis, 13-6.

## CONNECTICUT

Top honors went to New Britain, coached by John Toner, by virtue of an unblemished 9-0-0 slate. In a post-season thriller in the Orange Bowl, New Britain dropped a 20-12 decision to Miami Senior, Florida champs. Large schools disputing New Britain's title were Crosby of Waterbury, Naugatuck, and Fairfield Prep. In the middle enrollment group, the claimants were East Haven, Middletown, Shelton, and Stonington. Berlin, New Canaan, and Putnam had the best records among the state's smallest schools. Only Crosby (coached by James Lee) of the above group was unbeaten and untied.

## DELAWARE

Three of the state's 34 football-playing schools wound up undefeated. In the southern Kent-Sussex counties region, Seaford and Smyrna won 9 and 8 games, respectively, without losing; while in the larger New Castle County, William Penn of New Castle tied once in 9 games. It was the fourth consecutive crown for Coach Billy

## ALABAMA

Woodlawn of Birmingham, coached by Kenny Morgan, annexed the unofficial crown with a perfect record in 10 games, only 31 points being scored against them. Just one game was close, a 6-0 win over defending champ Bessemer in the third game of the season. Indicative of Woodlawn's power were two triumphs over powerful Phillips by 48-0 and 39-0 counts. Outstanding small-school slates were turned in by Marshall County of Guntersville, Coffeeville, Elba, Verbena, Greenville, and West Blocton.

## ARIZONA

Though Phoenix Union copped the Class AA title, it wasn't even champ of its own city league! Coach Sam Winningham's squad had a record of five wins and one tie playing among the eight large schools in the state. But that one tie (with North Phoenix) and a de-



# Champions, 1955

Cole of William Penn. Bobby Dowd coached Seaford's fine team, which was also a repeater in its area.

## DISTRICT OF COLUMBIA

High school athletics are now completely integrated in the nation's capital, and Cardozo, an all-Negro school, won the city public school title, then went on to tie Gonzaga, Catholic League titlist, 6-6, for the city diadem before 17,255 fans in Griffith Stadium. Sal Hall coached Cardozo and John Jankowski handled Gonzaga.

## FLORIDA

Miami Senior won its fourth crown in six years under the able tutelage of Coach Charlie Tate. Though the champs dropped their opening game to Coral Gables, they came on with a rush to eliminate all other contenders. Coral Gables shared the championship of the Big Ten Conference with Landon of Jacksonville. Another strong team was fielded at Manatee High of Bradenton, while among the smaller entries Auburndale was outstanding.

## GEORGIA

A thrilling championship game between LaGrange and Rossville ended in a 13-13 tie for the Class AA championship. Athens belted Valdosta, 41-20, in a high scoring Class A playoff; while Class B went to Morgan County of Madison, 21-12 over Vidalia, and Monticello downed Stone Mountain, 13-7, for the Class C title. Coaches included: Oliver Hunnicutt (LaGrange), Glenn Wade (Rossville), Weyman Sellers (Athens), Charlie Brake (Morgan County), and Milton McLaney (Monticello).

## HAWAII

It's getting to be a habit for the second place team in the Oahu Interscholastic League to knock off the champions in the annual Thanksgiving Day Bowl game. In 1955 Punahou dropped Roosevelt's undefeated champs, 20-7, before 21,000 stunned fans. Roosevelt won the league title earlier in the sea-

son when it beat this same Punahou array, 20-6. In 1954 Punahou was upset by Iolani under similar circumstances.

## IDAHO

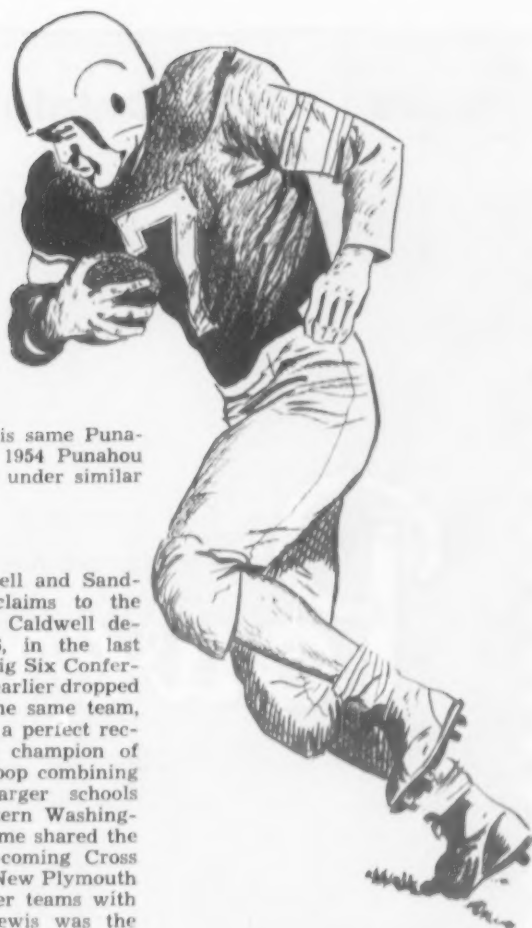
Two schools—Caldwell and Sandpoint—might lay claims to the mythical state title. Caldwell defeated Nampa, 19-6, in the last game to annex the Big Six Conference crown, but had earlier dropped a 28-0 decision to the same team, and so did not have a perfect record. Sandpoint was champion of the Inland Empire loop combining Northern Idaho's larger schools with four from Eastern Washington. Burley and Jerome shared the title in the up-and-coming Cross State League, while New Plymouth and Rigby were other teams with fine records. Ray Lewis was the Caldwell coach.

## ILLINOIS

Evanston Township, coached by Karl Plath, unaccountably dropped one to Waukegan in mid-season, but otherwise might be considered the best in tough state play. From downstate, though, would come screams from East St. Louis, no longer operating under the fabulous Wirt Downing, but undefeated just the same as Fred Cameron did a masterful coaching job. Elgin, Peoria, Woodruff, and Champaign were large schools with splendid records, Champaign being once tied, the others coming through unscathed. Small schools that went unbeaten and untied were: Arcola, Atwood, Alwood, Chillicothe, Lawrenceville, Pana, and Sycamore. The Chicago city crown went to Vocational of the Public League, 7-0, over Weber.

## INDIANA

Roosevelt of East Chicago returned to the top with an undefeated Northern Conference championship team. Coach Pete Rucinski's charges defeated South Bend Adams, 13-7, in the East-West playoff for their fifth unblemished season. Lawrence Central, Seymour, Sullivan, Boonville, Plym-



outh, and Royerton had unbeaten, untied seasons, but none was a serious challenger.

## IOWA

Davenport won the state crown hands down. The only trouble Coach A. J. (Butch) Stolfa's team encountered was in its opener with the city's Catholic representative, St. Ambrose, which fell, 7-6. After that, they outscored the opposition, 249-26, in rolling to the Mississippi Valley Conference crown and swamping three Illinois teams. It was a real powerhouse performance and East Des Moines and West Waterloo, second and third in the ratings, were never in the race for the lead. Arlington, Fayette, Galva, Holstein, University of Iowa City, Farragut, Marion, Nevada, Northwood, Oakland, Pocahontas, Scranton, and Webster City all had unbeaten and untied marks among smaller enrollment schools.

## KANSAS

A perfect record in large school competition earned the mythical state crown for Topeka in very much the same manner that Davenport won its crown. There simply wasn't a challenger in reach. Otto Bodenhausen was the coach of the champs. Mention should also

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be made of smaller schools with fine records: Dodge City, Concordia, Oberlin, Herington, Effingham, Caldwell, Bronson, McLouth, Lyons, Scott City, Centralia, Highland, Inman, and Belle Plaine.

#### KENTUCKY

Corbin, in the Southeast corner of the state, was acclaimed unofficial champion. Coach Bill Tucker guided his eleven to 11 straight wins, including a hard-earned 27-21 bowl game over Newport Public. Newport, the underdog, was on the Corbin three-yard line when the game ended. Paducah Tilghman, and two Louisville schools, St. Xavier and Male, were other highly rated squads.

#### LOUISIANA

Istrouma Parish of Baton Rouge returned to the throne it occupied in 1950 and '51 behind the explosive running of Billy Cannon, the high-gear offensive coaching of James (Big Fuzzy) Brown, and a stalwart supporting cast. The champs settled matters early in the Class AAA playoff against Fair Park of Shreveport and went on to win, 40-6. Among their victims, the Indians numbered Little Rock, Arkansas champion. In Class AA, Neville of Monroe beat Reserve, 27-14, in the finals, and Ferriday stretched its victory streak to 39 when it upended Redemptorist of Baton Rouge, 14-0, for the A crown. Class B winner was newcomer Holy Name of Algiers (suburban New Orleans), which thumped Delhi, 34-7. Holy Name will move up in class next season.

#### MAINE

Thornton Academy of Saco ran its victory streak to 24 as Coach Tommy Eck's charges repeated in the state's largest enrollment class. Gardiner successfully defended its medium crown, though Mexico was also undefeated but against weaker opposition.

#### MARYLAND

Loyola and Patterson Park, two strong Baltimore schools, were the class of the state in 1955. Patterson Park, public champion, was undefeated and untied. Loyola dropped a game to St. James Prep of Hagerstown, then came on to win seven in a row. Ed Hargaden coached Loyola, and his son quarterbacked the team. Veteran Irv Biasi was the brains behind Patterson Park's continuing success.

#### MASSACHUSETTS

Champions of Eastern Mass.'s large and excellent football groups were Haverhill (A), Gloucester (B), Newburyport (C), and Charlestown (D). Undefeated and untied

teams were Hopkinton, Natick, Whitman, Charlestown, Concord, and Winchester. But championships are settled on the basis of strength of competition, thus Charlestown was the only one which copped a division title. The other three winners were tied once but unbeaten. A 14-12 victory over Lowell, unbeaten in 36 straight games, gained the large school trophy for Coach Paul Ryan's Haverhill eleven. The championship of Western Mass. went to Springfield Cathedral, with Greenfield in second place.

#### MICHIGAN

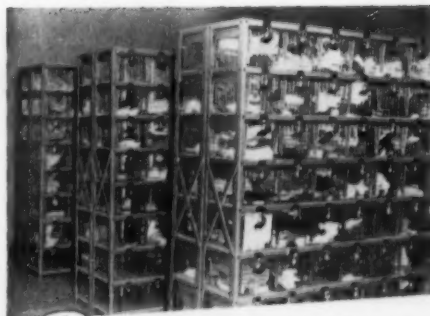
Add illustrious coaching records . . . that of Henry (Hank) Fonde, former Michigan backfield star who coached Ann Arbor to eight straight victories in 1955 and the mythical state championship. Fonde's record since he started in 1949 reads 53 wins, one loss, two ties in one of the midwest's toughest prep leagues. His defeatless streak has now reached 38, the last loss being to Toledo Scott in the 1951 opener. Ann Arbor's great streak overshadowed a fine performance by city champ Pershing of Detroit, Mike Haddad's latest powerhouse and winner of nine straight. Center Line had an outstanding record among the Class B schools, and Corunna was rated high among smaller circles. 25 schools finished the season with unblemished marks, including Lincoln Park in Class A. Honor, a small upstate school, was unscored upon—a rarity these days.

#### MINNESOTA

A Minneapolis newspaper named Rochester, Big Nine champion, the mythical state champion. None could doubt the ability of Coach Lauren Hagge's warriors, who were paced by All-American halfback, Tom Robbins. But good claims on the title could be put forth by Edina-Morningside of Suburban Minneapolis and unbeaten International Falls. Fergus Falls, Jackson, Lake City, Spring Valley, LeCenter, Mountain Iron, Hector, and Adams had unbeaten seasons in somewhat smaller circles.

#### MISSISSIPPI

Vicksburg made history by sweeping 11 opponents to win the Big Eight Conference (northern) championship—highest honor in Mississippi. Mike Campbell's Greenies belted Brookhaven, Southern champion, 20-7, in the annual playoff. The Big Eight now numbers 20 schools and next year will add two more, and its championship isn't easy come by. Winona won the crown in the Delta Valley Conference, Crystal Springs in the Little Dixie, Canton of Choctaw and Starkville, Little Ten. The state's large Negro schools have their own "Big Eight," com-



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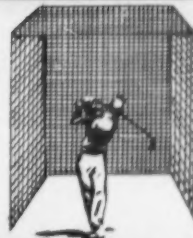
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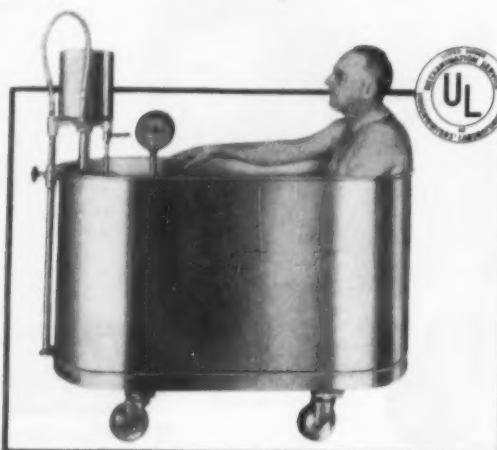
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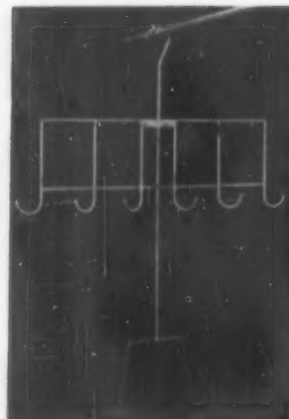
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posed of 18 schools, and Oak Park of Laurel won the crown.

#### MISSOURI

There simply hasn't been a sound method devised of settling titles in the state. Outstanding teams were fielded at Kirkwood, Sikeston, Carthage, St. Louis Central, DeSota, Sedalia, Kansas City East, North Kansas City, Hamilton, Centralia, Butler, Lees Summit, Richmond, Marceline, and Mexico. They're listed in no particular order, although this department might cast a hasty vote for Kirkwood—and run!

#### MONTANA

A slight reorganization of scholastic affairs in 1955 seemed to have worked for the better. Instead of the largest six schools in the state playing for the Class AA crown, the group was expanded to 10. Missoula ran up seven straight wins, but had to face Central Catholic of Butte in a playoff. The result was foreordained, for Coach Hal Sherbeck's defending champs had previously beaten the Butte eleven in a practice game. The championship score was 32-6. Havre was the undisputed champion among the 10 schools rated Class A by the state association. Smaller classes do not play beyond regional championships.

#### NEBRASKA

Class A strength was in the Omaha area and Creighton Prep was acknowledged to be state champion. The Junior Jays are running a 29-game unbeaten string against major opposition, although only this season's eight games belong to current coach, Don Leahy. Crete High, defeated once, but playing a rugged schedule was the Class B titlist, while Grant led Oshkosh for Class C honors. Ray Westover coached Crete and Ed Haensler handled Grant.

#### NEVADA

Reno won the state's "Big Game" against Las Vegas, 14-7, to bring the Class AAA crown up north. The two schools are the only members of their class in the small state, but a combined record of seven wins and six losses against tough California opposition is indicative of their calibre of play. Boulder City, state AA champion, probably had the best claim to an overall championship. The Eagles defeated Elko in the state title game, 27-13, and Elko held a decision over Reno. Carson City won the Class A crown. Class B schools play six-man football.

#### NEW HAMPSHIRE

State champions were: Nashua (A), Exeter (B), and St. Anthony of Manchester (C). Coaching the



winners were, respectively: Buzz Harvey, Larry Stone, and Alfred H. Ranger.

#### NEW JERSEY

Memorial of West New York won popular acclaim as state champs, as Coach Joe Coviello's fine eleven smashed through a nine-game schedule without a defeat or tie. There were three other unbeaten and untied teams: Dumont in Group III, Bernardsville in Group II, and Frenchtown in Group I. Montclair, Vineland, Englewood, Long Branch, and Harrison were tied once. West New York, however, was the glamor team as it won its eighth county title in 10 years and ran its victory stride to 30 straight.

#### NEW MEXICO

After a two-year hiatus, Roswell returned to the top in AA by defeating Las Cruces, 19-14, in the championship game. Gadsden of Anthony was Class A champ for the third straight year, while Santa Rosa won in Class B and Ruidoso in Class C. The latter was unbeaten and unscored upon in 10 games.

#### NEW YORK

Football may be on its way back in New York City, the only major city in the country which hasn't been determining a grid champ among its public schools. Starting next year, the 20 high schools (out of 60) that haven't given up the grid game will compete in formal leagues with a final playoff. The hope is that it's not too late to save a dying game. The city's Catholic schools are experiencing a rapid growth; though only seven are playing football, they've combined with suburban schools to form a rugged prep league. St. Francis of Brooklyn and Archbishop Stepinac of New Rochelle tied for the championship of this group in 1955. Among state association members, Lawrence of Long Island claimed the unofficial championship of Nassau County, with Bethpage and Oceanside also compiling undefeated marks. In Suffolk County, Amityville and Riverside shared the large school title, Northport won among the smaller schools. Roosevelt of Yonkers and Harrison were outstanding in Westchester County; and further up the Hudson, Poughkeepsie had a real powerhouse team in Section 9. Mont Pleasant of Schenectady was unbeaten in an abbreviated six game schedule, as was Gloversville. Massena ran its winning streak to 47 games in the Northern Conference; and in the Mohawk Valley region fine records were turned in by Sherburne, Cazenovia, Oneonta, Auburn, and Seneca Falls. Elmira won the Southern Tier championship. Two Corning schools, Northside and Academy, tied for the West Central League crown. In



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Rochester, Edison, Marshall, and Madison shared the title, while Brighton was titlist in the adjacent Central Western group. East High defeated Lafayette for the Buffalo city crown. Lackawanna won its first Niagara Frontier crown, while the championship of the growing Western New York Catholic loop was shared by DeSales of Lockport and Canisius of Buffalo. In Erie County play, Amherst Central, Lancaster, and Springville were champs of their respective division.

## NORTH CAROLINA

Boyden of Salisbury, coached by Bill Ludwig, captured its first AAA crown by defeating Durham's Eastern champs, 13-6. In Class AA, Kinston, coached by Frank Mock, defeated Hendersonville by a 12-7 count. Cary downed Spruce Pine, 21-0, for the A title. Some of Western North Carolina's larger schools do not compete in the state eliminations, since they have long had their own association. Valdese became champion of this group by defeating Kings Mountain and then winning by default from Albemarle in the final. Experts regarded Albemarle as the strongest AA school in the state despite its forfeit.

## NORTH DAKOTA

Fargo kept the state crown in its own city, replacing Bishop Shanley as state champ. The charges of Coach Acey Olson upended St. Mary's of Bismarck in the East-West playoff, 7-6, by virtue of an 81-yard sprint by a 5-6, 140-pound reserve halfback, Dick Klimpel, midway in the final quarter of a game played in rain, sleet, snow, and 30-mile winds. Fargo then stopped St. Mary's on its one-yard line in the final minute. Carrington, Washburn, Page, Hillsboro, Hankinson, St. Leo's of Minot, and Hettinger were tops among the smaller schools.

## OHIO

The weekly press association polls which determine the mythical championship had Massillon and Canton McKinley on top most of the way and the two teams ended the season by playing each other. McKinley broke Massillon's seven-year string by a 13-7 count, for its first undefeated season since 1934. Wade Watts coached the new champs, and just to show to what lengths they go in these two neighboring cities, he had his team live together in a motel, erected towers for spotters to detect flaws in Massillon's play, and announced before game time (he was the home coach) that the intermission between halves would be cut to 15 minutes, ostensibly to prevent Massillon from developing and showing movies of the first half

in the dressing room! Massillon, it seems, has a portable dark-room for this purpose. The Tigers were ruined by two bad passes from center. Though Massillon had earlier in the season been tied by Mansfield, its 8-1-1 record still gained second place in the poll. East Liverpool and Fremont Ross were third and fourth with fine teams. In the newly organized Greater Ohio League, the title was shared by Hamilton, Mansfield and Springfield—and that's a tough group. Benedictine, the Cleveland champion, was also strong, as were Columbus East, Toledo DeVilbiss, and Youngstown East. Zanesville was the undefeated winner of the rugged Central Ohio League.

#### OKLAHOMA

Ada officially returned to the state throne after having won the mythical crown in '54 when the playoffs were abolished for one year. Coach Elvan George guided his team through a season with only one loss. Tom Turvey was the coach of Lindsay's Class B titlists who defeated Picher, 14-0, in the final. Thomas was Class C champ, 21-12, over Hennessey. The state's largest 13 schools do not compete in playoffs, but Ada was rated even above them. Ada also won in '51 and '52.

#### OREGON

After tying for the Class A-1 title in 1954, Marshfield High of Coss Bay won it outright in 1955 with one of the finest teams the state has seen. Coach Pete Susick took his team through eight regularly scheduled games and three playoffs—none even close—climaxed with a 19-0 win over Gresham. Marshfield's line averaged 190 and its backs 182, and five of the boys placed on the first three all-state teams. It was the 23rd game without defeat for the Black Pirates. Vale also made news when it thumped Dallas, 45-0, for the Class A-2 crown, its second in a row. Dutch Kawasoe's team from the Idaho border also won 11 straight and have a defeatless string of 22. In Class B, it was Malin, 26-12, over Siletz. John Conroy was coach of the champs.

#### PENNSYLVANIA

Another great season in the Keystone State with spectacular surprises and great talent abounding. In the Western part of the state, Aliquippa gained top honors by defeating Mt. Lebanon in the WPIAL Class AA playoff by a narrow 14-13 margin. Huntingdon and Clearfield shared the Western Conference crown, both going un-

beaten and untied. In Northwestern Pa., Warren won 10 straight, while Erie Cathedral Prep won the title in its city league. In the mid-state area, Williamsport's powerhouse went unbeaten until the final game when Steelton edged out the Millionaires, 7-6, forcing them to share the Central Penn Conference crown. Carlisle was another great one in the area, running through 10 games safely. Coal Township of Shamokin started its season by losing to Williamsport, 28-25, then blasted 10 opponents to win the Eastern Conference honors from over 50 other schools. Coal finished up with a 63-6 victory over West Scranton in the playoff between North and South champs. Easton was unbeaten in the state, but dropped its finale to Phillipsburg, N. J., 7-6. It was sweet revenge for Phillipsburg, for Easton had done exactly the same thing in 1954 to the Jerseyans. LaSalle won the Philadelphia city title from Northeast High before 20,000 fans, 26-0. In suburban Philadelphia, it was Lower Merion leading the way. Schools with unbeaten and untied marks included Northampton, Braddock, Minersville, Mahanoy Township, Pennridge, Ridley Park, Swarthmore, John Carroll of Carrolltown, and Hummelstown.



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## RHODE ISLAND

Rhodie's 26 schools are divided into three classes which play round-robin schedules with each team meeting all the other members of its group. LaSalle of Providence won the Class A crown by defeating East Providence, 26-0, to finish a half game ahead of East and Mount Pleasant. St. Raphael of Pawtucket won in Class B, and South Kingstown in Class C. Both were undefeated.

## SOUTH CAROLINA

The state's 15 largest schools call themselves Class AA, but they still don't have any formalized method of deciding a state champion. It's all left to a newspaper pool, which of course leads to arguments. Greenwood was elected to the top spot in 1955 and immediately became the target for snipers from Florence. It seems that Florence won more games against AA opposition although Greenwood was an almost unanimous choice in the pool. Both were undefeated and untied. The smaller classes play eliminations in both ends of the state, then have playoffs between Up-State and Down-State titleholders. In Class A, it was St. Andrews of Charleston defeating the up-state representative, Olympia of Columbia, 33-13, in the finale. The Class B crown went to Summerville of the South which defeated Saluda, 19-0. Class C winner was St. John's, 8-6, over Thornwell Orphanage. The teams tied 6-6 after 48 minutes of play, but in a "Montana Play-Off" St. John's tossed the opposition back of the midfield stripe after each had run five plays.

## SOUTH DAKOTA

No one school dominated the football scene in 1955. Sioux Falls Washington, the largest school in the state, has been forced to drop out of the largest league because of its domination. It now plays an independent schedule against such opposition as it can find in Wyoming, Minnesota, Iowa, and Nebraska—and it does very well too. Though beaten once by East Sioux City, Iowa, Bob Burns' Warriors won eight other games—seven of them shutouts. Among the schools operating within the state, Pierre had a fine record, winning nine straight after dropping its opener to Huron. Phil Trautner was the coach. Mitchell won the ESD League, but Joe Quintal's team was dropped by Pierre. Lead was champion of the Black Hills Conference, Clark of the Northeast, and Canton of the Big Eight. Westington Springs, playing an independent schedule on the smaller level, ran its undefeated string to 27. Rollo Greeno is the coach of this fine squad.

## TENNESSEE

Over 200 schools play football in the Volunteer State and the only method of determining a champion is with a rating system. Montgomery Bell Academy of Nashville, undefeated and untied, piled up most points in 1955, gaining a clearcut margin over second-place Isaac Litton, also of Nashville. The champs defeated Litton on the field, too—but on the second try! The two teams played a 14-14 tie in the last game of the regular season, but then MBA ran off with a post-season affair, 26-7. Seven schools were unbeaten and untied, but none played a difficult enough schedule according to the masterminds of the pencil who figure those things. Kingsport, with eight straight, probably was the leading claimant. Others were: Huntland, Waverly, Marion County, Greenbrier, Celina, and Alcoa. Once tied were Tullahoma, Covington, Rogersville, and Lawrenceburg.

## TEXAS

Perhaps one of the greatest school-boy teams in history was Abilene, Lone Star AAAAA champion. The Eagles of Coach Chuck Moser were awe-inspiring in crushing runner-up Tyler, 33-13. It was the second title in a row for the West Texas school, and a very convincing one. Abilene scored on drives of 95 and 90 yards the first two times it got the ball and the issue was thereby resolved. In Class AAA, Port Neches scored a slight upset over Garland, 20-14, to take first place. The Garland supporters were more than upset, for Port Neches scored with one second to go after trailing, 14-13. Stamford of Class AA showed great power by running up 20 points in the first quarter and then coasting to a 34-7 win over Hillsboro. Deer Park successfully defended its Class A diadem with a hard-fought 7-0 win over Stinnett. Texas will reorganize its leagues next season to bring 16 district winners into the large class eliminations instead of the current eight.



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## UTAH

East Salt Lake, won the Class A crown for the third time in four years, defeating Murray, 27-0. Many observers thought Coach Tally Stevens had one of the best in Beehive State history. Pleasant Grove took over where Murray left off in Class B after the latter school moved up a notch in competition. Coached by Ned Alger, the Vikings had a tough fight in the final with North Summit, winning 6-2 when a reserve lineman scooped up a fumble and ran 18 yards to score.

## VERMONT

Burlington got the nod as state champ and apparently deserved it, since there was little griping compared to previous years. Burlington hadn't had an unbeaten, untied season since 1908 and hadn't won a state title since 1922. So Coach Carl Adams became something of a hero in town. Burlington had a true championship club plus smart coaching, reflected in its ability to come from behind several times and to far outplay the opposition in the fourth quarter. No other team in the state was unbeaten.

## VIRGINIA

All the right cards were dealt in the final week of play as far as Norview High and its coach, Pete Sachon, were concerned. Of the 32 large schools which play for the state Group I championship, Jefferson Senior of Roanoke and Hopewell went into their last games, like Norview, undefeated. Then came a pair of surprising upsets fashioned by members of the Eastern Division, Woodrow Wilson of Portsmouth and Warwick, neighbors of Norview. Wilson crushed the Roanoke eleven, 22-0, while Warwick scored an even more emphatic 33-14 victory over the Hopewell team which was until then considered the best of the group. Both victors were also rans. But Norview took care of South Norfolk, its last opponent, in cham-

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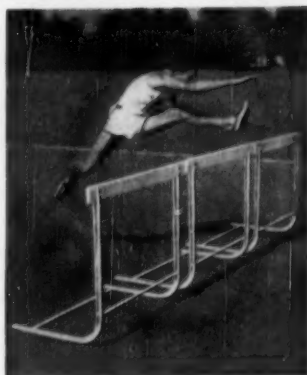
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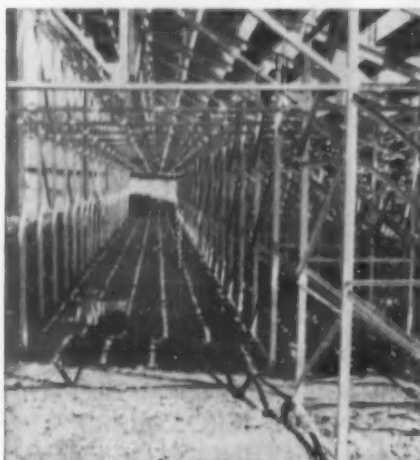
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pionship fashion, 32-6. Group II schools play to nine district championships. The titlists were: Smithfield, Douglas Freeman of Henrico County, Blackstone, Appomattox, Lexington, Martinsville, Richlands, and Winchester Handley. In the far western part of the state four schools—Wise, Gate City, Clintwood, and East Stone Gap—had claims on the crown. Neighboring district champions occasionally meet one another in challenge games and this was the case when Blackstone downed Appomattox for the Southside area title. Martinsville was the powerhouse of the smaller schools with a team which could have held its own among the Group I leaders.

#### WASHINGTON

Lewis & Clark of Spokane became the first Eastern school to be named state champion in the nine years of the press associations' polls. Defeated by a city rival in their opener, the Tigers came on to win seven in a row for both the city and Columbia Basin League crowns. Robert Bartlett was the coach. Garfield of Seattle finished second. The Seattle champions invited Lake Washington into their lair for the annual Thanksgiving Day game, but it was a mistake. Lake Washington was only rated 20th in the state, and Garfield's 12-0 victory failed to gain any prestige. Pullman, Shelton, and Battle Ground, all smaller Class A schools, had undefeated and untied records but their opposition wasn't strong enough to impress the pollsters. Champions in large conferences were: Vancouver (Southwest), Olympia and Tacoma Lincoln (Capital), Kent-Meridian (Puget Sound), Marquette of Yakima (Yakima Valley), and Arlington and Edmonds (Northwest). Little Winlock, followed by Ritzville and Ilwaco, was rated No. 1 in Class B.

#### WEST VIRGINIA

A small state but one with more than its share of football brawn, West Va. organized a third enrollment class to give medium-size schools a better break. St. Albans won 10 straight and was awarded the Class AA crown without necessity of a playoff — although there were other teams with the same records. Bridgeport showed plenty of stuff to win Class A, 45-13, over Webster Springs. The B crown went to Monongah which edged Elizabeth, 14-13, in a stirring come-from-behind effort.

#### WISCONSIN

The big plums in the Badger State are conference crowns. Kenosha, under Chuck Jaskwich, had a powerhouse which won the Big Eight in the Southern part of the

state. Halfway up Lake Michigan, the Fox River Valley Conference claims to be just as tough. Green Bay West led the pack, but was denied the right to call itself champion for the fifth straight time because a polio epidemic forced curtailment of the annual round-robin schedule. Rufus King won the Milwaukee City title, Cudahy and Whitefish Bay shared the Suburban crown, and Racine St. Catherine was the champ of the Catholic League. Wausau was tied by Eau Claire, 14-14, in the last game of the season, but until then had a perfect mark.

## WYOMING

Laramie won the Big Five championship but the big news again was the success of Worland's fine eleven which won the Class A title for the fourth year. Terry Smothermon, a 214-pound back, was just too much for Torrington's line on the last play of the season. Forced into what Wyoming knows as a "California Playoff" (although we have no record of it being used in California), Worland pushed the ball to the Torrington 48½ yard line after 10 plays.

## "Here Below"

(Continued from page 5)

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- **THIS IS TRAMPOLINING (2nd Edition).** By Jim Norman and Frank LaDue. Pp. 175. Illustrated. Cedar Rapids, Ia.: Nissen Trampoline Co. \$8.

THE perfect reference text for school and college programs, this book answers every question on trampolining. It includes teaching principles and programs, lesson plans, and nearly 500 "flip-picture" photos that demonstrate the popular exercises step by step. Also included are instructions for assembly and care of the trampoline plus many stunts and games. Prepared by two of the greatest trampoline authorities in the land, the book has proven so popular that it has now gone into its second edition.

- **TRACK AND FIELD ATHLETICS (Fourth Edition).** By Bresnahan, Tuttle and Cretzmeyer. Pp. 528. Illustrated—drawings and tables. St. Louis, Mo.: The C. V. Mosby Co. \$5.50.

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- **ALL OUT FOR THE MILE.** By George Smith. Pp. 250. Illustrated. New York: Sport-Shelf. \$3.75.

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- **SIMPLE GYMNASTICS** (*Know the Game Series*). Pp. 32. Illustrated. New York: SportShelf. 50¢.

THIS newest title in the popular Know-the-Game series has been published in collaboration with the Amateur Gymnastic Assn. of England. Its clear self-explanatory drawings and instructions explain more than 50 gymnastic exercises using simple apparatus. Among the exercises shown are rope climbing, vaulting, hand balancing, and somersaulting.

North American distributor of both this and the preceding book (*All Out for the Mile*) is SportShelf, 10 Overlook Terrace, New York 33, N. Y.

- **TRAMPOLINING** (Revised). By Newton C. Loken. Pp. 42. Illustrated—photos and drawings. Cedar Rapids, Ia.: Nissen Trampoline Co. \$1.

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## Cross-Country Coaching Program

(Continued from page 38)

the walking. After 15 minutes of these moving exercises, which include high knee running, alternate leg high kicking, toe touching while walking, etc., the circle is stopped and 20 minutes of static movements is given, beginning with standing stretches and trunk flexions.

2. Knee bends and adductions of the thighs in a crouch position.

3. Prone position with trunk extension and pushups.

4. Supine position with situps and stretches, knee flexions, leg and thigh flexions. The routine is never varied except in duration, and while the content is formal, the method becomes increasingly informal as the season progresses with any of the runners capable of taking charge.

### THE FIRST TWO WEEKS

Confine the workouts to an area which you can supervise, and never let the boys run beyond your view. The old adage that you learn to run by running is true enough, but the laws of habit formation also enter the picture. If you let your squad go into the hills using the wrong body carriage, hand position, and foot placements, you'll see these bad habits become firmly entrenched and you'll have to break them down before you can polish up the boys' form later on.

I like to have my new candidates jog over the course the first day. I don't feel that this 2½-mile jog is too much to expect of the average boy, but if he finds it uncomfortable he's permitted to walk. The thrill of moving through the hills and seeing the field of his future efforts more than compensates for a little stiffness.

This is not in violation of the principle of keeping them in sight, since jogging can be taught in one day. Striding and running effectively are the problems. This 2½-mile jog follows the calisthenics and precedes each day's workout.

The calisthenics and jogging are kept up for the first week, with the last part of each day given over to teaching running form. Have the squad stride from 220 yards to 500 yards with emphasis on ball-heel foot placement, low arm carriage, little or no arm drive, a relaxed and almost erect trunk, and elimination of overstriding and exaggerated

knee lift, particularly in the taller candidates.

At the beginning of the second week, proper adjustment of body lean on uphill and downhill work should be taught. Again use a controlled situation, picking your hill and repeating the work under personal guidance to your satisfaction. Pace work begins with 70 sec. quarters at an even stride as the Tuesday problem, and 2:30 halves as Thursday's goal.

At the end of the second week, give them a chance at the full course, not as a time trial, but to cover the distance in any time they wish as long as they just jog and stride. Don't allow any plugging along; insist that they use either the stride they've been taught or else throttle all the way down to a jog.

Typical mid-season workout:

Monday—calisthenics — overdistance — striding 4 miles — intra-squad relay race with 220 legs.

Tuesday—calisthenics — jog 2½ miles—pace work on 5 minute mile, two one mile efforts, 15 minutes apart.

It's a pleasure to welcome Dan O'Grady into the Scholastic Coach fold. Now coaching at Danbury (Conn.) H.S., he's one of the smartest and most successful schoolboy mentors operating in the East. After coaching all sports at Rhode Island College of Education from 1935-43, he took over the reins at La Salle Academy in Providence, R.I., and made Good with a capital G. From 1943 to 1950, his track and cross-country teams copped 105 league, state, New England, and national championships—without losing a dual meet! Moving to Danbury in September 1950, O'Grady had to start from scratch. A great builder, he brought his teams along steadily; and his record in dual cross-country meets now stands at a highly respectable 48-8. Danbury was unbeaten last fall, won the Fairfield County crown for the third straight year, and placed third in the state both in '54 and '55. His magnificent cross-country treatise is applicable to both established squad setups and beginning schools.

Wednesday—calisthenics — cover course jogging and striding alternate ½ miles, preferably the hilly parts.

Thursday—calisthenics — jog 2½ miles—stride four 70 second quarters at 10 minute intervals.

Friday—calisthenics — jog 2½ miles or, if away from home, walk over the course to be raced.

Some conditioning devices to avoid staleness or monotony over a long season:

1. Once a week, work out on some other school's course. Change of scenery helps, particularly in overdistance.

2. Replace your wind sprints, the pet hate of the boy but the bread and butter of the coach, with sprint relays of the continuous type. Just as every lineman hopes to some day carry that ball, so does every distance man love to emulate the sprinters, the glamour boys of track.

3. If you must run a time trial, send the boys away in groups according to ability, 30 seconds apart; you'll get more and better racing.

4. Organize a Pace Setters Club for those who can hit a 70 sec. quarter, 2:30 half, and 5:00 mile right on the nose. We allow .1 on the 440, .5 on the half, and 1 second on the mile leeway.

5. Try not to cover your own course in practice too often in the same manner. Start in the middle or reverse it now and then.

#### ADVANCED WORK ON FORM

1. **Foot Placement:** In cross-country, the heel comes into play and the boy who can utilize a ball-heel landing with a very relaxed ankle will get more coast into his stride and not tend to bob up and down.

If you have a cinder or dirt path available, brush it clean and let the runner stride over it. Then examine the foot marks to see where the heel comes into play. If you have tar roads, no cinders, chalk the heel of the shoe and check this way.

2. **Rhythmic Breathing:** Many of the muscles involved in deep breathing (as distance running necessitates) are also involved in the contractions required to propel the body forward in the series of controlled falls that makes for good striding. Where the contractions are rhythmic, activity can be sustained with greater ease because of the increased ability of the organism to adjust to the factor of waste elimination.

Try teaching four breaths—two counts inhaling on the left foot and right foot and two counts exhaling on the next left foot and right foot. Thus one complete breathing cycle

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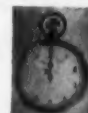
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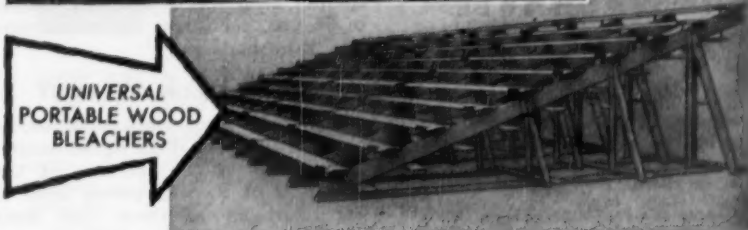
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covers four strides. This deeper, slower breathing results in better oxygenation, and thus helps lessen fatigue caused by action of lactic acid. Much of the tightness around the neck and shoulder girdle, usually blamed on incorrect arm action, may be traced to incorrect breathing wherein a secondary use of the sterno-cleido-mastoid and trapezius muscles occurs.

3. **Arm Carriage:** The motion of the arm, except in the final sprint, is negligible. The hands are carried lower than in flat racing, and should never pass behind the hip. Have the boys occasionally flick their fingers early in the season as a reminder that the fist should not be clenched but the fingers flexed in a relaxed manner.

4. **Pace and Speed Work:** All pace work should be done on the flats around a measured track or grass oval. Tell the squad what pace to run and then give each boy his time as he finishes. When working at the half, three quarters, or mile, plan each lap and insist upon the schedule being followed. Divide the group into sections, according to capacity, and never require the slower boys to hit the pace asked of the top men, or they'll have to race and thus fail to relax and learn to stride.

In a quarter mile pace workout for 20 runners, you might require 70 sec., 72 sec., 75 sec., and 80 sec. of the four divisions. Be as critical of the "firemen" who hit the clock too fast as you are of the men who are a second slow, and you'll be sure of keeping the work under constant control. I put the watch on every boy every time he works on the flats in order to teach him just how fast he's moving while the experience is recent enough and intense enough.

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a list of our own squad in the order of finish. We give our first man 10 points, the second man 9 points, and so on to 1 point for the tenth finisher.

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It's thus advisable to stick to the points as scored, keeping the team at full strength with each man sure of his right to run.

## Playing First Base

(Continued from page 46)

The first idea is to get the lead runner. The first baseman should start in fast and, if he can, be moving toward second or third (wherever the lead runner is going) as he picks up the ball. Then he can throw with the same motion. The play to first actually is a last resort—when you can't get the lead runner.

**Are there any particular rules on plays where the pitcher covers first?**

When the ball is hit toward the first baseman, he goes in and pitches it underhand to the pitcher covering the bag—tossing it as far out in front of the bag as he safely can. Too many men will pitch it to the bag and the pitcher coming over will get confused and miss the bag.

If the ball is hit over toward second base, the first baseman may not be able to make the underhand toss. He should then throw the ball to the pitcher just about the time that the pitcher steps on the bag. The underhand toss should be aimed up around the chin, so that the pitcher doesn't have to look down or up in handling it.

**What are the first-baseman's responsibilities on cut-off plays?**

Managers and coaches differ on this. Ordinarily, a first baseman will handle the cut-off from center field and right field, while the third baseman will assume the job on hits to left field. A lot of coaches, however, will let the first baseman handle all cut-offs. In any case, the cut-off man should always line himself up between the thrower and the receiver.

He should always be on the alert for a call from the catcher. The latter's call determines whether the throw should be cut off or let through.



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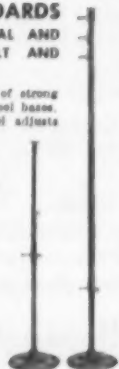
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## Handling the Relievers

(Continued from page 7)

the game after it had gone several innings. It appeared that the game would have to be postponed. But after much delay, play was resumed with the same pitchers. Newsom fretted and fumed as he went through his second warmup.

After several more innings, the same thing occurred—which meant Newsom had to warm up a third time. Now he was really fit to be tied and I began needling him—calling him a cry baby and saying that if a skinny guy like Gomez could warm up three times, why couldn't a big hulk like him do it.

Perhaps these remarks had no bearing on the final result, since Newsom was just the man to perform this endurance feat. Knowing Newsom, I knew that he really wanted to continue pitching and I merely took the occasion to work on his ego. At any rate, he went the complete nine innings for the victory. After the game, to hear him tell it, you'd have thought that no other pitcher could have done it—and he might have been right at that!

The relief pitcher must have the same determination illustrated by Newsom—under all circumstances and all conditions. He cannot be upset by a short warmup, the condition of the pitching rubber, his failure to sleep the previous night, bases cluttered with opponents, the importance of the particular game, or any of a dozen other things.

He has one job to do—pitch out of trouble or keep out of it. He must go about the task with coolness, determination, and concentration.

Two other matters might be taken into consideration when waving to the bullpen for help. These concern the use of a reliever in relation to the batter and the use of a reliever in relation to the pitcher being removed.

The first of these pertains to combatting right-hand batters with right-hand pitchers or left with left. This must take into account what pinch hitters are available and whether the coach or manager has made a change or is contemplating one.

The second of these considerations concerns the type of pitchers involved. An extra fast pitcher—that is, one with a good fast ball—followed by a control artist, or vice

versa, sometimes proves just what the doctor ordered.

The motion of the pitcher may be another factor. Any of these things may serve as an effective change of pace against the batters; and even if they succeed in retiring only a batter or two, that may be all you need to win.

In the final analysis, it's the relief pitcher who can step on the mound and start throwing low strikes who's most likely to be successful. The pitcher who gets behind will always find himself in trouble.

Many's the time that the third out comes from a miraculous catch of a line drive off the first pitch of a reliever. This often is construed as luck, but these things happen to good relievers. The defense always plays better behind pitchers with good control.

### ORGANIZATION OF BULLPEN

The organization of a bullpen staff is quite simple for big league teams, since certain pitchers are always designated for relief. It's further simplified by the fact that definite areas are established for bullpen activity. The only problem is one of distance (between the bench and the pen), and most clubs have solved this by means of an intercom system.

In amateur ball, the setup is entirely different. Since all the players normally are on the bench, the coach can put his finger on the pitcher(s) and catcher(s) as the case may be. And since the warmup area is near the bench, he can convey instructions by means of word or hand signals.

Every coach knows which pitcher or pitchers are likely to relieve on a given day. However, since games aren't usually played on successive days, every pitcher should be available for relief duty.

Important point: The catcher for the first relief pitcher should always have a ball in his possession. Otherwise valuable time may be lost. The catcher should also get the pitcher into action as fast as possible. If the situation is critical, he should speed up the pitcher. If circumstances indicate that his team may get out of trouble, he should slow down the action.

The coach must always keep his eye on the bullpen to check this

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matter, since the bullpen toilers frequently become too absorbed in the game.

Bullpen decisions are extremely tough. There's no cut-and-dried procedure that can be recommended. It's all up to the individual coach. What may be a dire predicament for one coach may be only a routine matter to another.

Every coach every season will watch one of his boys breezing along with a shutout and a commanding lead. The coach, the players, and the fans will relax. Then bingo! Several first balls will be hit for singles and extra bases and before another pitcher can be heated up, the lead will have disappeared or the opponents will be on their way to a big inning.

Ever-inquiring minds will want to know why the relief pitcher wasn't ready. Conferences on the mound can, of course, help give the relief pitcher additional time to prepare himself. But these huddles shouldn't be excessive or to the point where spectator interest is affected.

Late in a game, all coaches should anticipate the tiring of their pitcher. This is particularly true on hot days or after several long innings. The bullpen should always be active in such cases.

#### RICHARDS' STUNT

In recent years, some coaches have borrowed a trick from Paul Richards. The pitcher is hurling good ball. Then comes a critical situation. A dangerous hitter is up. Let's assume he's left-handed, while the pitcher is right-handed. The coach would like to play percentage by bringing in a left-hander. But he still doesn't like the idea of removing his right-hander.

So he moves the right-hander to some other position and brings in a lefty to face that dangerous left-handed hitter. After the lefty disposes of the hitter, he goes out and the righty returns to the mound.

That's a cute stunt that's been worked several times in the big leagues. But its merit as a consistent piece of strategy has yet to be proven.

Insofar as the daily training schedule of relievers is concerned, it's hardly any different than that of the regular hurlers—particularly in college and school ball, where practically everybody starts and relieves.

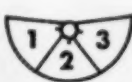
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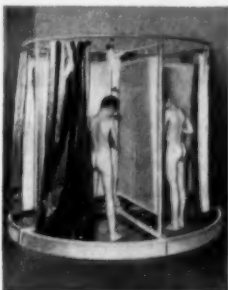
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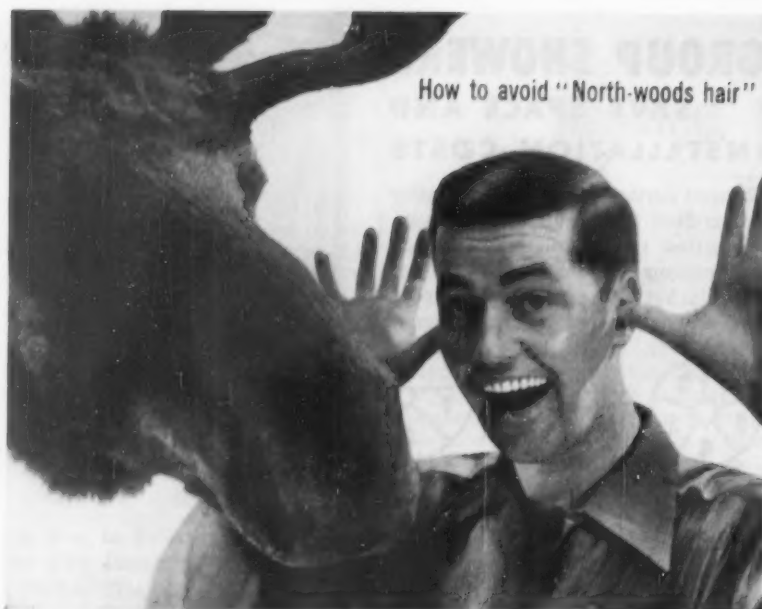


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Note how the jaws of the solid steel legs grip the steel stringer and make a positive, immovable connection of steel—how the greater the weight, the firmer the grip. Yet by release of the toggle bar at the base, the legs are released and fold into an easily carried and easily stored member.

Hussey Stands are available from stock in two styles—Portable Bleachers (Model 6), Portable Grandstands (Model 8)—in 6, 10 and 15 tier 12 foot sections. Other sizes to order. (Additional sections can be added as needed.) Can be used indoors and out and erected and taken down easier and faster than any other stands on the market.

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the same day. I'd much prefer to run a relief pitcher hard one day and let him rest or not pitch that day. Or perhaps run him after he's pitched two days in succession, then rest him that day.

To me, the biggest problem in running a pitching staff is not to wear it out. This can happen where the bullpen occupants are kept continually on their feet. One of my biggest worries is having the pitchers throw too much.

## Belly Roller

(Continued from page 9)

leg. You can neither jump nor kick upward effectively while leaning forward.

The rotation of the body about the bar is most important. It's achieved by simply lifting the jumping leg and letting it float over as the body revolves around the bar.

Many jumpers kick the jumping leg at the apex of the jump—frequently kicking the bar off in the process. This seems to be an instinctive effort to check the body turn in order to land in a balanced, face-down position.

To properly roll the jumping leg around the bar so as not to hook it, the body rotation should continue unchecked. This means a landing in the pit somewhat on the side and rolling on over on the back.

In pre-season and early season training, Hall jumps every day. He usually begins with a number of jumps using a four-stride approach. The height used is such that he must exert good but not maximum effort to clear the bar. The short approach is a valuable training aid in that it forces the jumper to concentrate on the proper execution of all phases of his jump, particularly his drive and spring from the ground.

Hall later moves back to his regular take-off and jumps until he is tired. He always tries to keep his practice "floor" as high as possible, but seldom jumps for height in practice.

During the competitive season, he usually jumps only on Monday and Wednesday, following the above pattern, and finishes up these workouts with two or three 100's on the grass at  $\frac{3}{4}$  effort. On Tuesday and Thursday, he confines his activities to calisthenics and 100's on the grass.

This routine is that used for the high jump alone. When he was also competing in the 100, considerably more running was added.



## Interval Training

(Continued from page 24)

should comprise about 60% of all workouts. Training for speed should compose about 30%, with a final 10% reserved for long-interval work and time trials. As the season progresses, this relation will shift toward more speed-endurance and long-interval workouts.

Examples that have been used as illustrations have assumed a miler who hopes to run 4:16 by the end of this competitive season. A similar approach can be made for all other endurance runs. While space doesn't permit a detailed discussion for each distance, Tables 1, 2, and 3 should provide a satisfactory explanation.

Quite naturally, the question will be asked, "How effective and how successful is this program of training at your own school, coach?"

Frankly, time has been too short to permit good judgment in giving an answer. Further, our squad doesn't appear to have any great prospects, so proof of effectiveness isn't likely to be found in championships won.

But yesterday a senior two-miler, who in three years of running has never broken ten minutes ran five 880s within 25 minutes at an average time of 2:22 and came back today with two single miles in 4:52. And last week a sophomore half-miler ran five 220s within 25 minutes in :24, :24, :24.6, :25.2, and :25.7, finishing well within himself.

These are not great performances. But in the short time we've followed this type of work, it has proven interesting certainly, effective in making the men confident of progress, and, of increasing importance in our more and more demanding academic schedules, adaptable to both time and study requirements.

As our understanding of interval training becomes clearer in detail and as our skill in its utilization improves, we believe physical potentials will be more and more realized.

More importantly, we believe American distance runners, from high school to our greatest national champions, can benefit through adoption of its methods and at the same time remain true amateurs and good students.

### FOOTNOTES

<sup>1</sup>Dr. Sid Robinson, unpublished talk before the National College Cross-country Coaches Meetings, East Lansing, Mich., 1947.

<sup>2</sup>Norris McWhirter, *Athletics World*, May 1954.

<sup>3</sup>Laurence Morehouse, Ph.D. and Augustus T. Miller, M.D. *Physiology of Exercise*, St. Louis: The C. V. Mosby Co., 1953, p. 211.

<sup>4</sup>Ibid, p. 114 ff.

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## Important Rule Changes

### NCAA

#### Football Rule Change

"Section 3, Article 1. The ball shall be a four-panel, pebble-grain leather cover without corrugation other than for seams or lacing and enclosing a rubber bladder. It shall be inflated to the pressure of 12½-13½ lbs. and have the shape and dimension shown by the diagram. Its weight shall be 14-15 ounces. *A rubber ball may be used by election of either team while on offense.*"

### NFSHSAA

#### Football Rule Revision

"1-3-1: This article will be revised to give *rubber or composition-covered footballs* which have been approved as meeting proper reaction and durability standards the *same status as that of a leather-covered ball*. It will also be provided that if the two competing teams cannot agree on whether a leather-covered ball or a ball with another type cover shall be used, each team may designate at the beginning of a half which type ball will be used when that team snaps or free kicks."

**FOR YOU** this means every college playing under NCAA and NFSHSAA rules should have available at each game a minimum of three approved rubber-covered footballs. Place your order today for SEAMLESS 581S and 591LS.

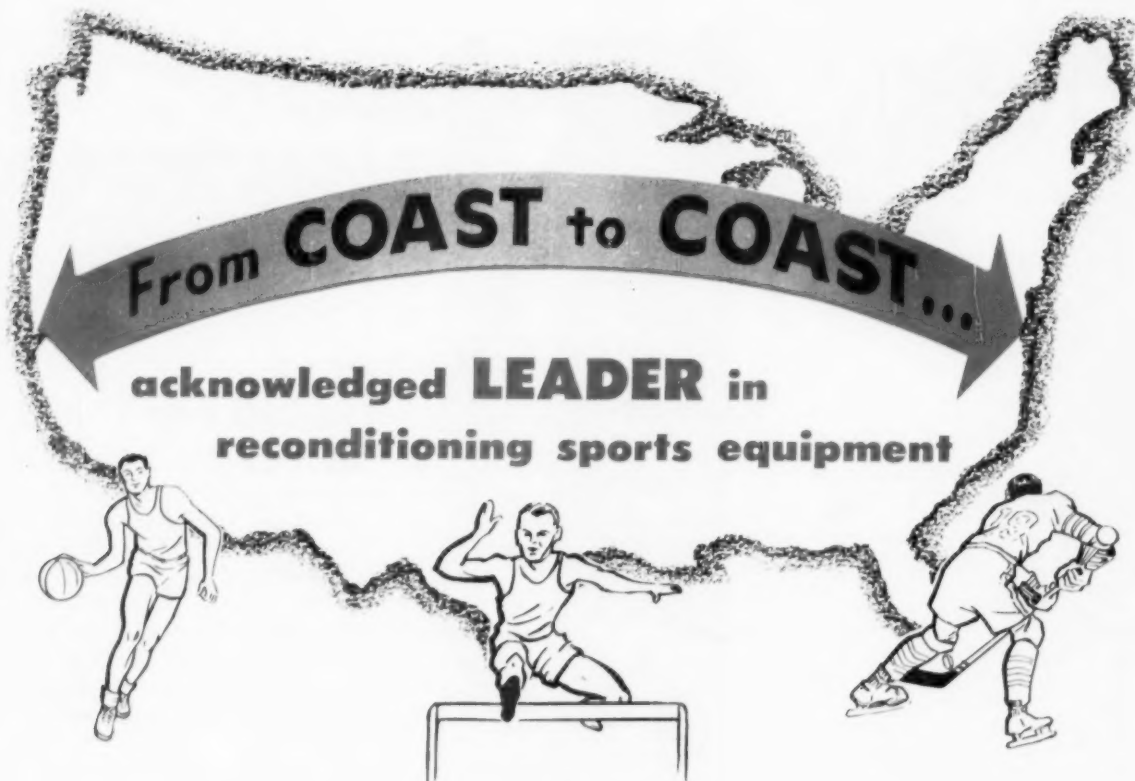
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